

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

DYSON, INC.,

Plaintiff,

v.

MAYTAG CORPORATION,

Defendant.

Civil Action No. 06-654 (GMS)

DECLARATION OF KATHRIN A. WANNER

Kathrin A. Wanner, being duly sworn, deposes and says:

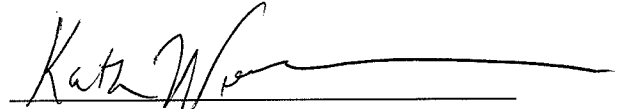
1. I am an attorney with Manatt, Phelps & Phillips, LLP, counsel to Plaintiff Dyson, Inc. ("Dyson") in the above-captioned action. I execute this Declaration in support of Dyson's Motion for a Preliminary Injunction which is filed concurrently herewith.
2. True and correct photographs of the Hoover Fusion packaging containing the "No Loss of Suction" claim are attached as Exhibit A.
3. True and correct photographs of the Maytag Legacy packaging containing the "No Loss of Suction" claim are attached as Exhibit B.
4. A true and correct photograph of the footnote to the "No Loss of Suction" claim from the Hoover Fusion packaging is attached as Exhibit C.
5. A true and correct photograph of the footnote to the "No Loss of Suction" claim from the Maytag Legacy packaging is attached as Exhibit D.
6. A true and correct copy of a demonstrative exhibit regarding Maytag Legacy packaging containing the "No Loss of Suction" claim is attached as Exhibit E.
7. A true and correct photograph of the Maytag Legacy vacuum containing the "No Loss of Suction Claim" is attached as Exhibit F.
8. A true and correct copy of the Hoover Fusion website (as of August 23, 2006) containing the "No Loss of Suction" claim is attached as Exhibit G.
9. A true and correct copy of the April 5, 2006 decision published by the National Advertising Division of the Council of Better Business Bureaus ("NAD") is attached as Exhibit H.

10. True and correct copies of two letters which constitute Dyson's compliance challenge to Maytag's No Loss of Suction claims before the NAD dated May 10, 2006 and May 16, 2006 are attached as Exhibit I.
11. A true and correct copy of the August 2, 2006 decision published by the NAD regarding Dyson's compliance challenge is attached as Exhibit J.
12. A true and correct copy an article entitled "Hoover to Dyson: It's On Now" from page 14 of the June 26, 2006 issue of Advertising Age magazine is attached as Exhibit K.
13. A true and correct copy of a July 18, 2006 letter from Maytag's outside counsel, Stephen Durchslag of Winston & Strawn, is attached as Exhibit L.
14. A true and correct copy of the ASTM F558-03 Standard Test Method is attached as Exhibit M.
15. A true and correct copy of the cover and page 6 of the Hoover Fusion/Maytag Legacy Owner's Manual is attached as Exhibit N.
16. A true and correct copy of the August 29, 2006 Declaration of Susan H. Goldsmith is attached hereto as Exhibit O.
17. A true and correct copy of the September 6, 2006 Declaration of Michael B. Mazis is attached hereto as Exhibit P.
18. A true and correct copy of Maytag's Reply Memorandum in Support of Maytag Corporation's Motion to Transfer Venue is attached hereto as Exhibit Q.
19. A true and correct copy of relevant portions of the December 7, 2006 Transcript of Telephone Conference is attached hereto as Exhibit R.
20. A true and correct copy of relevant portions the March 15, 2007 transcript of Status Conference is attached hereto as Exhibit S.
21. A true and correct copy of Defendant's Objections and Responses to Plaintiff's Special Interrogatories Regarding Plaintiff's Motion for Preliminary Injunction is attached hereto as Exhibit T.
22. A true and correct copy of a March 23, 2007 letter from Maytag's outside counsel, Lisa Parker to Mr. Hummel is attached hereto as Exhibit U.
23. A true and correct copy of relevant portions of the March 29, 2007 transcript of Telephone Conference is attached hereto as Exhibit V.
24. A true and correct copy of the April 12, 2007 Scheduling Order is attached hereto as Exhibit W.

25. A true and correct copy of the August 28, 2006 Declaration of Gordon Thom is attached hereto as Exhibit X.

I declare under penalty of perjury, under the laws of the United States of America, that the foregoing is true and correct.

Executed this 18th day of April, 2007 at Los Angeles, California

A handwritten signature in black ink, appearing to read 'Kathrin Wanner', written over a horizontal line.

Kathrin A. Wanner, Esq.
MANATT, PHELPS & PHILLIPS, LLP
11355 West Olympic Blvd.
Los Angeles, CA 90064
Telephone: (310) 312-4000
Facsimile: (310) 312-4224
kwanner@manatt.com

CERTIFICATE OF SERVICE

I, Chad S.C. Stover, hereby certify that on April 18, 2007, I caused to be electronically filed a true and correct copy of the foregoing document with the Clerk of the Court using CM/ECF, which will send notification that such filing is available for viewing and downloading to the following counsel of record:

Francis DiGiovanni, Esquire
James D. Heisman, Esquire
CONNOLLY BOVE LODGE & HUTZ LLP
The Nemours Building – 8th Floor
1007 N. Orange Street
Wilmington, Delaware 19801

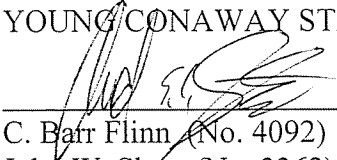
I further certify that on April 12, 2007, I caused a copy of the foregoing document to be served by hand delivery on the above-listed counsel of record and on the following in the manner indicated:

BY E-MAIL

Ray L. Weber, Esquire
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*Attorneys for Dyson Technology Limited
and Dyson, Inc.*

EXHIBIT A



FUSION™
Cyclonic Filtration System

Backbone System by 12%*
Models F517, F518 and F519

**NO
LOSS OF
SUCTION***

**Adjustable
Handle Height**

Adjustable handle height
fits most users.

Removes pet hair from carpet.

**Flipper
On/Off Control**

Flipper control for easy
on/off.

Protects carpet from
damaging wheels.

32' Cleaning Reach

Reaches all corners of room.

E-Z Empty™ Dirt Cup

Easy to empty dirt cup.

**Pet Hair
Cleaning Tool**

Removes pet hair from
carpet.

**On-Board
Cleaning Tools**

Removes pet hair from
carpet.

E-Z Access™ Belt Change

Change belt without
tools.

Cyclonic Filtration System

Removes dust and debris.

No Filters to Replace

Removes dust and debris.

Extension Wands

Removes dust and debris.

**15" Widepath
Nozzle**

Removes dust and debris.

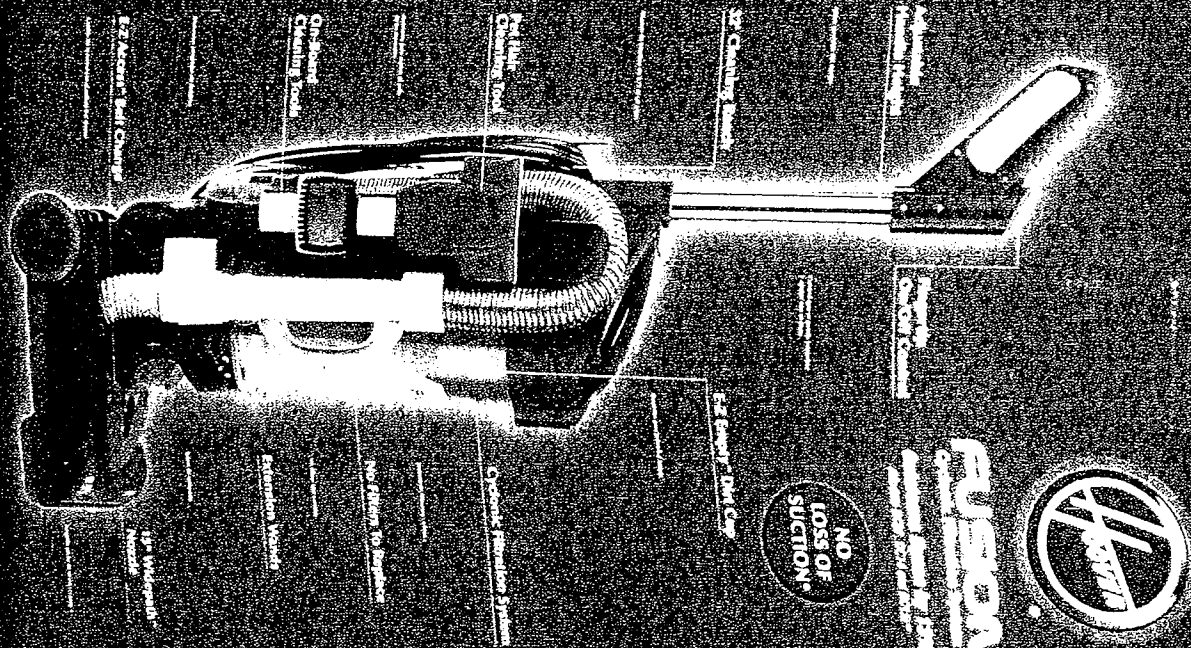


EXHIBIT B



MAYTAG

Legacy
Series

Cyclonic Filtration

PEAK PERFORMANCE KIT



Extra-Long Hose
Stretch hose for cleaning
stairs with ease.



Extension Wands
Three extension wands.
Easily clean ceiling corners
and high windows.



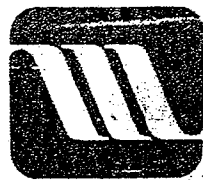
Extra Filter
Now you always have
a clean filter on hand.



**Hard-Floor
Brush**
Safely cleans
hard surfaces.

**No Filters
To Replace**
Extra life time
of the vacuum. Safely
to remove and clean.





MAYTAG

Legacy
Series
Cyclonic Filtration

**Adjustable
Handle Height**

Varying heights
for convenient use
and storage.

**Fingertip
On/Off Control**

No pedals to maneuver.
Turn off and on with
the flip of a finger.

**NO
LOSS OF
SUCTION***

**38' Total
Cleaning Reach**

Extra-long 24' power cord
and 14' of stretch hose and
extension wands allow you
to vacuum several rooms
without stopping.

E-Z Empty™ Dirt Cup

No bags. No mess.
Empties from the bottom.

**Pet Hair
Cleaning Tool**

Picks up pet hair from
stairs and upholstery.

Cyclonic Filtration System

Helps remove common allergens
from your home.

No Filters To Replace

Lasts the lifetime of the vacuum.
Easy to remove and clean.

**Onboard
Cleaning Tools**

Clean every corner of
the house with these
onboard tools:
• Pet Hair Cleaning Tool
• Crevice Tool
• Upholstery Tool
• Dusting Brush

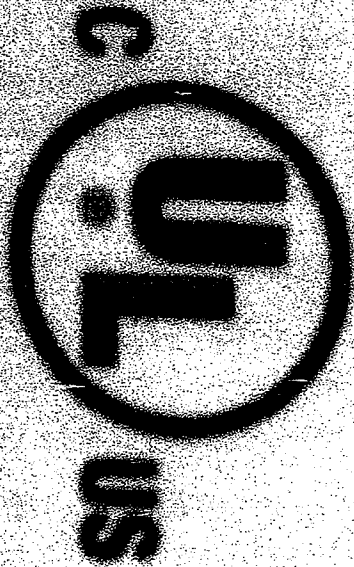
Extension Wands

Extension wands
allow you to reach
high places and
clean under furniture
and appliances.

EXHIBIT C

* Suction stays constant for up to 10 ounces of dirt, as tested by an independent laboratory using ASTM 1558 test method and a dirt composition comprised of 70% mineral dust, 20% vegetable dust and 10% fibrous material.

EXHIBIT D

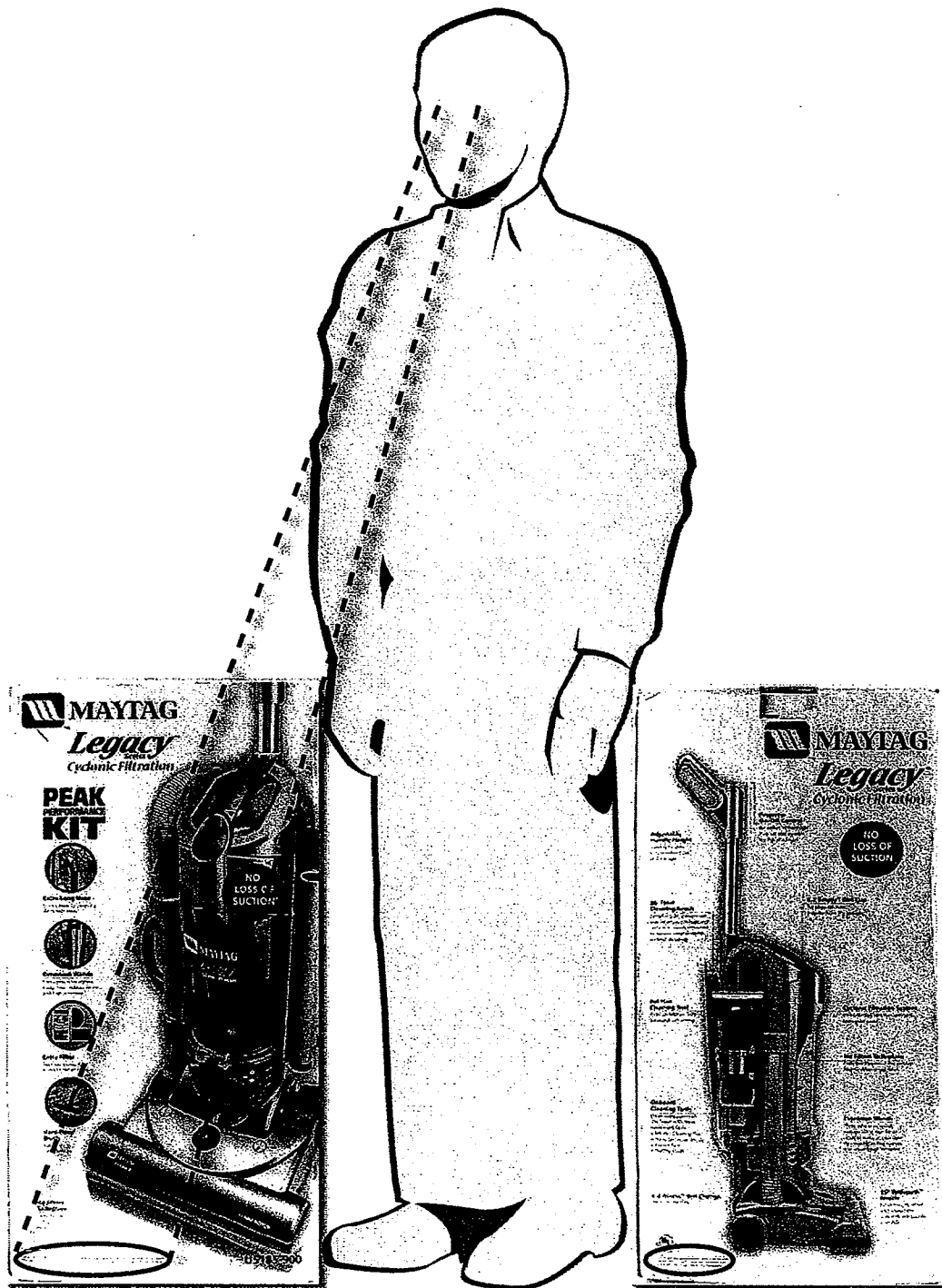


LISTED

Suction stays constant for up to 10 ounces of dirt, as tested by an independent laboratory using the ASTM International F558 test method and a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material.

EXHIBIT E

Maytag's Disclaimer: Too Small to Make an Impact



Front Disclaimer

24.5 inches from Claim
Occupies 0.701% of Box

Back Disclaimer

26.5 inches from Claim
Occupies 0.543% of Box

EXHIBIT F

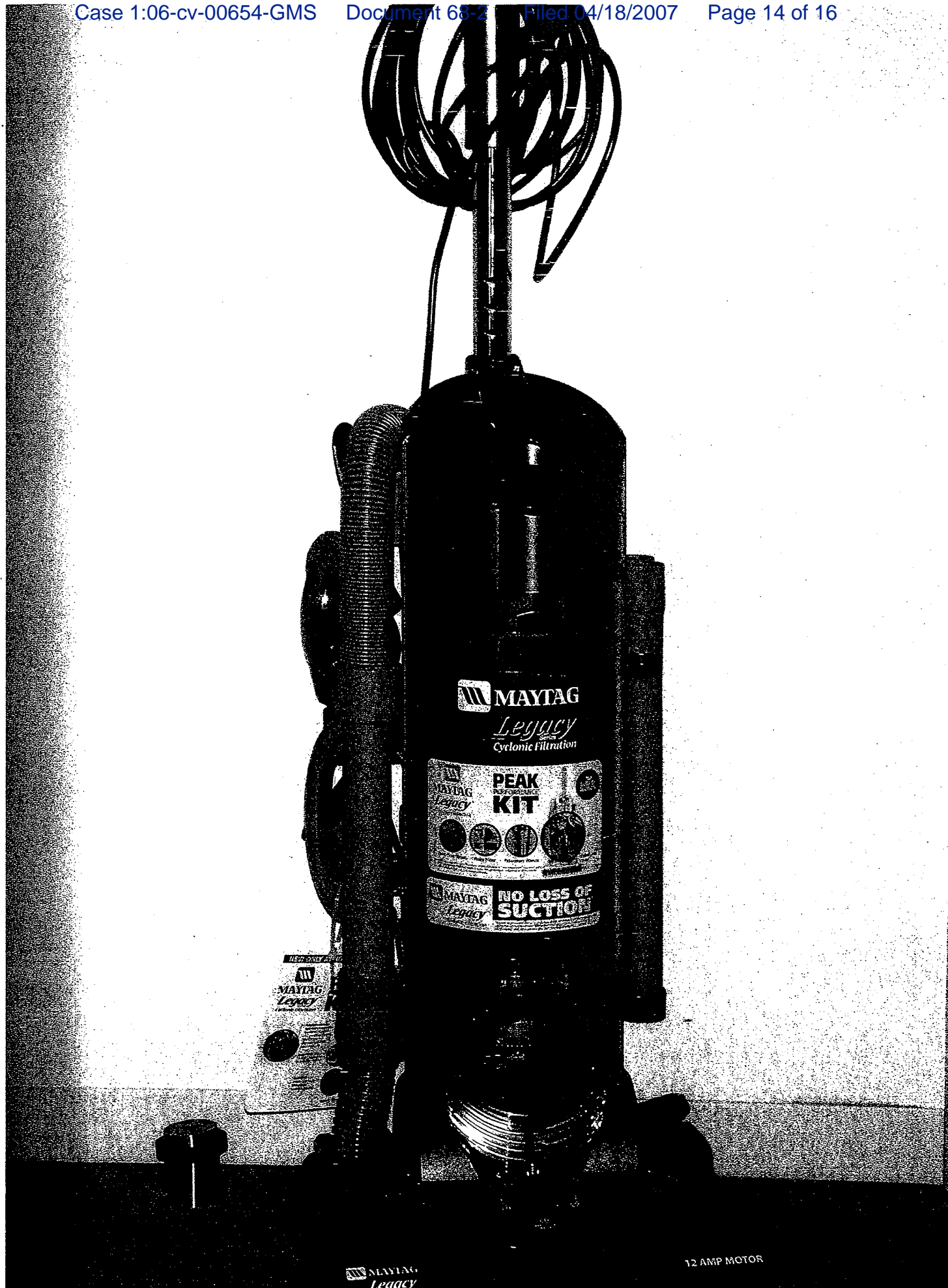


EXHIBIT G

[Home](#) [Products](#) [Customer Service](#) [Innovations](#) [About Us](#) [Shop](#)[UPRIGHTS](#) [DEEP CLEANERS](#) [HARD FLOOR CLEANERS](#) [CANISTERS](#) [SPECIALTY](#) [CENTRAL VAC](#) [COMMERCIAL](#) [CLEANING](#)**BAGLESS FILTRATION
UPRIGHTS:**» Elite™ Rewind™ Upright
Bagless

» Fold Away™ Widepath™

U5172900
U5175900» Fusion™ Cyclonic Bagless
Upright

» Hoover EmPower™

U5262910
U5265900
U5268970
U5269900

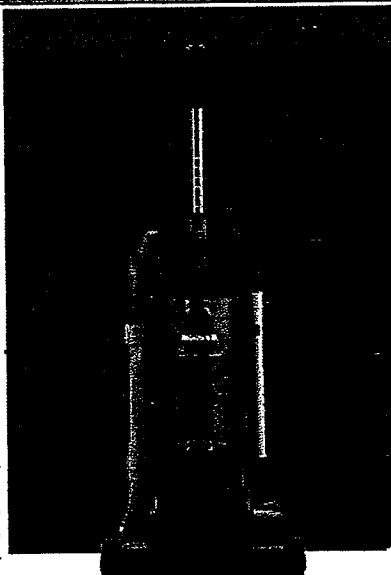
» Hoover Z™ Bagless Upright

U9125900
U9145900

» Savvy™

U8174900
U8181900» Self Propelled WindTunnel™
BaglessU6630900
U6634900

» WindTunnel™ 2 Bagless

U8341900
U8351900» WindTunnel™ 2 Complete
Bagless» WindTunnel™ 2 Surface
Command™ Bagless» WindTunnel™ 2 Bagless
Upright» WindTunnel™ Bagless
UprightU5753900
U5760900[PREV.](#)[NEXT](#)

Model number: U5180900

**Fusion™ Cyclonic
Bagless Upright**

- Cyclonic technology offers powerful cleaning with no loss of suction* *Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning Ability**
- Super-powerful cyclonic air movement - spins dirt and dust away
- No filters to replace - permanent washable filters last the life of your vacuum
- Adjustable Handle height - telescoping handle adjusts to varying heights for convenient use and storage
- 32' Cleaning Reach - with a 24' power cord and a 8' stretch hose, you can vacuum several rooms without having to reposition the power plug
- On-board tool set included - everything you need to reach every corner of the house - including a pet hair cleaning tool, two 14" extension wands, crevice tool and dusting brush for delicate surfaces
- Powered hand tool - brings power right to the spot you're cleaning - like stairs and upholstery
- E-Z Access™ Belt Change
- No filters to replace - no need to buy or replace filters, ever. Simply remove, clean and use again
- Extension wands - two extension wands provide more than 10' of reach with the stretch hose for cleaning ceiling corners and around high windows
- 15" Widepath™ Nozzle - one of the widest cleaning paths available, so you'll finish the job faster
- Available exclusively at Wal-Mart
- *** Suction stays constant for up to 10 ounces of dirt using a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material. No testing has established a correlation between suction performance and carpet cleaning ability in the home. Household results may vary.

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EXHIBIT H

NATIONAL ADVERTISING DIVISION®

70 West 36th Street, New York, NY 10018



NARC PARTNERS BY MESSENGER

Direct Line: (212) 705-0119

April 6, 2006

Jeffrey S. Edelstein, Esq.
Manatt, Phelps & Phillips, LLP
7 Times Square
New York, NY 10036

Re: Advertising for WindTunnel and Fusion Upright Vacuum Cleaners

Dear Mr. Edelstein:

I am writing to advise you that NAD has concluded the investigation based on your challenge. The final case decision is enclosed. NAD's announcement to the press will follow by regular mail or by fax. Please note that NAD's findings may not be used for promotional purposes or to indicate impropriety by any party.

As stated in *NAD/NARB Procedures* at § 3.1(B), if Dyson, Inc. takes issue with NAD's decision, you have a ten-day period (ending April 20, 2006) within which you may request that a panel of the National Advertising Review Board review the decision. The granting of a panel review is at the discretion of the Chairman of the NARB. Your request for a panel review should be addressed to the Chairman, NARB, 70 West 36th Street, 13th Floor, New York, New York, 10018, and copies must be sent to all the parties. The entire appeal process is described in the *Procedures* at §§ 3.1 through 3.8. Please review it carefully.

We greatly appreciate your contribution to the self-regulation program and, in particular, to the resolution of this inquiry. If you have any questions, please do not hesitate to call.

Sincerely,

Jennifer Fried
NAD Attorney

cc: Stephen P. Durchslag, Esq.

Enclosure

phone: 866.334.6272 • fax: 212.705-0130 • www.nadreview.org

Case #4467 (04/05/06)

THE HOOVER COMPANY

WindTunnel and Fusion Upright Vacuum Cleaners

Advertising Agency: *Undisclosed*
Challenger: *Dyson, Inc.*
Product Type: *Household Products*
Issues: *Comparative Performance Claims*
Disposition: *Modified*

Advertising claims by The Hoover Company for its WindTunnel and Fusion Upright vacuum cleaners were challenged by Dyson, Inc., the manufacturer of Dyson vacuums. The claims at issue appeared in a wide variety of media, including television commercials, print ads, radio spots, websites, brochures, and product packaging.

The challenged television commercial featured the following dialogue.

Person holding a Dyson vacuum cleaner: *"My vacuum is purple. They say it doesn't loose suction."*

Second person with a Dyson vacuum cleaner: *"My vacuum makes me look good."*

Third person with a Dyson vacuum cleaner: *"My vacuum was in a fashion magazine."*

Person standing next to a Hoover vacuum: *"My vacuum's a WindTunnel and it cleans better than Dyson."*

Voice-over: *"The self-propelled WindTunnel by Hoover cleans carpet 56% better than Dyson. It's proven by the only recognized test representing real-life conditions in American homes. After all, do you want people to look at your vacuum or your clean home?"; "Clean to the highest power."*

The following are representative of the other claims that served as the basis of the instant challenge:

"Dyson thinks things should work properly. We couldn't agree more. That's why our self-propelled WindTunnel picks up 56% more dirt than Dyson."

"[WindTunnel] Picks up more dirt than any other brand."

"The Hoover Self-Propelled WindTunnel Vacuum has been proven to extract more embedded dirt from horizontal floor surfaces than any other upright."

"The Hoover® Self-Propelled WindTunnel picks up 56% more dirt than Dyson."

"The self-propelled WindTunnel by Hoover cleans carpet 56% better than Dyson."

"WindTunnel Technology ... They [dual air ducts] not only lift the dirt but trap it so it won't fall back into your carpet." [Accompanied by close up of cyclone logo]

"[WINDTUNNEL] PICKS UP MORE DIRT THAN ANY OTHER UPRIGHT"

THE HOOVER COMPANY
WindTunnel and Fusion Upright Vacuum Cleaners
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"[WINDTUNNEL]HEPA FILTER WITH ALLERGEN FILTRATION. Long-lasting 3-year HEPA Filter with allergen filtration traps 100% of dust mites, ragweed and common pollen."

"[WindTunnel] TWIN CHAMBER BAGLESS SYSTEM HELPS MAINTAIN MAXIMUM PERFORMANCE"

"Patented WindTunnel Technology picks up more dirt than any other brand, including Dyson. Some vacuums pick up dirt, only to scatter it back down into your carpet."

"These results are based on ASTM International Test F608, the only recognized industry standard test representing real-life conditions found in American homes."

"[WindTunnel] 'No-Touch' Filter Cleaning System"

"[Fusion] Incredible cleaning power – every time you use it"

[WindTunnel] "PICKS UP MORE DIRT THAN ANY OTHER UPRIGHT ... Period!"

[WindTunnel] "PICKS UP OVER 70% MORE DIRT!" caption over chart comparing "All Hoover Self Propelled Uprights", "Oreck Model XL21-600 Upright", and "Dyson Model DC-07 Upright".

[WindTunnel and Fusion] "HEPA FILTER WITH ALLERGEN FILTRATION. Long lasting 3-year HEPA filter with allergen filtration traps 100% of dust mites, ragweed and common pollen."

[WindTunnel] "TWIN CHAMBER BAGLESS SYSTEM HELPS MAINTAIN MAXIMUM PERFORMANCE"

[Fusion] "Cyclonic technology offers powerful cleaning with no loss of suction."

[Fusion] "NO LOSS OF SUCTION"

"The Hoover® Fusion Cyclonic Bagless Upright Vacuum Outcleans Dyson by 13%"

[Fusion] "E-Z Empty Dirt Cup. No bags. No mess! Simply remove the cup, hold it over the trash and push the button to dump contents from the bottom."

Challenger's Position

I. Background

THE HOOVER COMPANY
WindTunnel and Fusion Upright Vacuum Cleaners
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The challenger explained that for many years, vacuums collected dirt and dust either by using a bag, or a bin combined with a large central filter. The challenger described both of these designs as "barrier filtration," and explained that the chief disadvantage of this method is that, while large dust particles settle to the bottom of the bag or bin, smaller dust particles clog the small holes in the bag or the filter, thereby creating a barrier to the airflow and losing suction power.

In contrast, the challenger explained, its DC07, DC14, and DC17 Dyson vacuums utilize a "root cyclone" layout, which uses centrifugal force to separate dirt particles of varying sizes. The significance of Dyson's mechanism of action, argued the challenger, is that unlike vacuums utilizing bags or bins, the challenger's machines never lose suction power, and therefore maintain a constant and continuous level of performance.

II. Implied Claims that the Challenger's Vacuum is Ineffective and Does Not Clean Properly

The challenger contended that the challenged advertising implies that the challenger's Dyson vacuums are ineffective and do not clean properly. Specifically, the challenger objected to a television commercial for the WindTunnel (and a rotating website banner) which purportedly implies that consumers choose Dyson vacuums solely for their looks and style. The challenger argued that these advertisements convey the false and misleading message that the challenger's vacuum cleaners are ineffective.¹

The challenger argued that its vacuums are highly effective. In addition to the above-described "root cyclone" system, the challenger noted its vacuums' advanced features including an "automatic brush control system" which protects rug fringes and the drive belt, a foot-operated on-off switch for the brush roll, automatic carpet-height adjustment, a reversible wand, a clear bin, on-board tools, and HEPA filtration.

a) Consumer Perception Survey

The challenger submitted a consumer perception survey purporting to show that the commercial conveys the message that the advertiser's vacuums clean better than the challenger's vacuums. The survey was conducted online and was completed by 265 adults throughout the United States, all of whom were actual or potential purchasers of vacuum cleaners. After watching the commercial and being asked open-ended questions about the commercial's overall message, 250 respondents (94%) knew the advertised brand was Hoover, and were asked questions about any messages communicated about the Hoover. In addition, 206 respondents (78%) were aware that the other brand in the commercial was Dyson, and were asked questions about any messages communicated about the Dyson vacuum. The challenger further argued that 77% took away superiority messages relating to Hoover's superiority to Dyson, and 46% took away a variety of disparaging messages about the Dyson vacuum.

¹ According to the challenger, the claim that Dyson vacuum cleaners are ineffective is conveyed in the challenged television commercial as well as in WindTunnel print advertisements which claim that Dyson vacuums do not clean properly, as well as the hangtag stating that "some vacuums...pick up dirt, only to scatter it back down into your carpet."

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WindTunnel and Fusion Upright Vacuum Cleaners
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Contrary to the disparaging messages conveyed by this commercial, the challenger argued, the challenger's vacuums are proven to be more effective than the advertiser's. Specifically, the challenger argued that its vacuum has constant suction power, that it outperforms the WindTunnel on a variety of floor surfaces, and that it has low dust emissions.

b) The Challenger's Dyson Vacuum is Proven To Be Effective

In support of the argument that its vacuum cleaner outperforms the WindTunnel on a variety of floor surfaces, the challenger noted that it has performed numerous efficacy tests on its vacuum cleaners using industry standards established by both ASTM International ("ASTM") and the International Electrotechnical Committee ("IEC").² The challenger argued that these tests demonstrate that Dyson vacuum cleaners outperform Hoover vacuums with respect to (i) suction power; (ii) performance on a variety of floor surfaces; and (iii) dirt emissions.

(i) Suction Power Testing

The challenger maintained that its Dyson vacuum cleaners have constant suction power. The challenger defines suction power as "a combination of suction pressure generated by the vacuum cleaner and airflow" as defined in ASTM F558 and IEC 60312. The challenger noted that a decline in suction power may occur when dust collects inside a machine, and that such a dust-loaded condition is highly consumer relevant, as many vacuum cleaners are used when partially loaded with dust.

The challenger noted that unlike "bag" or "bin" vacuums, Dyson's Root Cyclone system utilizes a series of eight cyclones to filter dirt and dust. Thus, because dust does not settle on any part of the vacuum required to maintain airflow, it argued that Dyson's vacuums experience no clogging or resulting loss of suction.

As substantiation, the challenger submitted testing conducted by Intertek Testing Services ("ITS"), an independent industrial testing and certification company. ITS measured the maximum suction power of the DC07, DC14, and the DC 15 Dyson vacuums—as well as that of the Hoover WindTunnel, the Eureka Boss Smartvac, the Kenmore Progressive, and the Dirt Devil Platinum Force Vision Upright. In each case, maximum suction power was measured pursuant to either IEC 60312 or ASTM F558. The challenger explained that both standards measure maximum suction power in a laboratory setting, but that IEC also measures suction as the vacuum cleaner becomes loaded with dust. The challenger noted that this test showed that the challenger's DC07 (the model featured in Hoover's advertisements) maintained a constant suction power of 268 airwatts throughout the test, which was by far the highest maximum suction power of any upright vacuum tested. The challenger further noted that the suction power of all the tested competitors rapidly declined from their "base" suction power, and that Dyson was the only vacuum not to lose suction as the vacuum filled with dust.

² The challenger noted that ASTM measures cleaning efficacy (F608) and suction power (F558) using two separate standards, but that the IEC standard addresses both cleaning efficacy and suction power in a single standard (60312).

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(ii) Cleaning on a Variety of Floor Surfaces Testing

Using both ASTM and IEC standards for vacuum pick-up efficiency, the challenger tested several of its own Dyson vacuums against several WindTunnels, along with a number of other upright vacuum cleaner models. Specifically, the challenger performed two types of tests: (i) ASTM-based tests conducted on plush and "level loop" carpeting, and (ii) IEC-based tests conducted on hard-wood floors with crevices and on Wilton carpet.³ With respect to the results of the ASTM-based tests, the challenger argued that while its DC07 model (which is featured in various Hoover advertisements) does not perform as well as the premiere WindTunnel model on plush carpet, it performs "much better on the level loop carpet" (72.7% for Dyson versus 88.2% for WindTunnel on pick-up). These test results further showed that the challenger's DC14 model performed better on level-loop carpet (77.9% for Dyson versus 88.2% for WindTunnel on pick-up) than it did on plush carpet (56.3% for Dyson versus 74.4% for WindTunnel on pick-up).

With respect to the IEC-based tests, the challenger noted that its DC07 was shown to outperform all competitors (including the WindTunnel) on hard wood floors, and that it offers performance comparable to the WindTunnel on Wilton carpeting. The challenger noted that when all of the IEC-based test results are combined, the DC07's pick-up results are vastly superior to the WindTunnel's—82% vs 51%.

The challenger further argued that when results from its ASTM-based tests and its IEC-based tests are "averaged across all four floor surfaces," (to represent actual consumer use), the Dyson outperforms the WindTunnel. The DC14 has an average 77.9% pick-up efficacy, the DC07 has an average 70.9% pick-up; the WindTunnel has an average pick-up efficacy of only 66.3%.

(iii) Dirt Emissions Testing

The challenger also argued that its Dyson vacuum has low dust emissions. In support of this argument, the challenger submitted dust emission testing⁴ purporting to show that the DC07 and the DC14 only emit 0.0001% dust back into the air, which means that the filtration methods in these models are 99.9999% effective. In contrast, the challenger noted that the WindTunnel emits 0.0170% of the collected dust back into the air, thus releasing 170 times more dust into the air than the challenger's machines.

c) Disparaging Nature of the Advertising

The challenger contended that the advertisements at issue are disparaging, and therefore violate NAD precedent as well as industry guidelines.⁵ The challenger argued that even if the

³ In its first submission to NAD, the challenger included IEC testing that was performed on hard wood floors with crevices and Wilton carpeting only. In its second submission to NAD, the challenger included "new" testing in which vacuum cleaners were tested on all five surfaces as specified by IEC.

⁴ The dust emissions testing was based on IEC 60312

⁵ *The Clorox Company/Clorox Toilet Wand System*, NAD Case # 4307 (April, 2005); *McNeil Consumer Healthcare/St. Joseph Adult Low-Strength Aspirin* NAD Case # 3871 (February, 2002). The challenger also cited the Better Business Bureau's *Advertising Review Handbook and Guidelines*.

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advertiser's superiority claims were true, the advertiser would not have license to falsely claim that the challenger's vacuums do not clean properly, or that the only reason consumers purchase these vacuums is for their looks and style. The challenger further added, again citing NAD precedent⁶ that the presence of humor in an advertisement does not relieve an advertiser from the obligation to support all reasonable interpretations of its claims.

III. Hoover's Implied Claim that The Dyson Vacuum Loses Suction

The challenger also took issue with what it characterized as the implied claim that the challenger's Dyson vacuum loses suction. The challenger noted the commercial at issue in this proceeding in which an actor sarcastically says, "My vacuum is purple. They say it doesn't lose suction." The challenger argued that the sarcasm in her voice indicates that she means the opposite of what she is saying—that the challenger's vacuum does in fact lose suction. Indeed, the challenger noted, the above-described consumer perception survey indicated that 23% of respondents took away such a disparaging message from this line alone.

Here again, the challenger pointed to the above-described testing (conducted by ITS) to show that its own vacuum cleaners maintain constant suction power throughout the test—while the suction power of all tested competitors rapidly declined. The challenger also noted that according to the only recognized industry standard designed to measure suction power under dust-loaded conditions, its Dyson machines are the only vacuum cleaners that do not lose suction as the vacuum fills with dust. Accordingly, the challenger argued that the claim that Dyson vacuums lose suction is false and misleading.

IV. The Advertiser's Cleaning Claims

(a) The Advertiser's Claim that the WindTunnel Cleans Better than Other Vacuums

The challenger objected to the advertiser's claim that the WindTunnel cleans better than other vacuum cleaners. Specifically, the challenger took issue with the advertiser's claim in Sears brochures that the WindTunnel "[o]utcleans all competitive bagless cleaners," in addition to the advertiser's tagline (in print advertisements, on television commercials, and on WindTunnel hangtags) that WindTunnel vacuums "[c]lean to the highest power." The challenger characterizes this claim as a broad cleaning superiority claim.

The challenger explained that cleaning involves a combination of pick-up and suction power with respect to all surfaces where consumers may reasonably use a vacuum cleaner. Among these surfaces, the challenger noted, were carpeted and hard floors, crevices, curtains, upholstery, stairs, and automobile interiors. The challenger noted, however, that the advertiser relies primarily on the results of testing conducted pursuant to ASTM F608 (*Standard Test Method for Evaluation of Carpet Embedded Dirt Removal Effectiveness of Household/Commercial Vacuum Cleaners*), which only measures pick-up on four types of carpeting. In addition, the challenger noted, the ASTM test does not measure suction power. For these reasons, the challenger argued

⁶ *Sanderson Farms/Sanderson Farms Chicken*, NAD Case # 4289 (March, 2005)

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that the advertiser's ASTM testing is insufficient to support the advertiser's broad superior cleaning claims.

(i) ASTM vs IEC Tests

The challenger took issue with the advertiser's claim that ASTM F608 is the *only* standard for measuring the cleaning efficacy of upright vacuum cleaners. In reality, the challenger contended, there are *two* equally accepted standards by which cleaning efficiency of upright vacuum cleaners is measured. In addition to the ASTM F608, the challenger noted, the industry also relies upon IEC 60312 ("Vacuum cleaners for household use—Methods of measuring the performance"). The challenger argued that NAD has accepted both of these testing standards in prior cases.

The challenger suspected that the advertiser relied *only* upon ASTM F608 (rather than the IEC 60312) because the advertiser's vacuum cleaners are designed primarily for cleaning *carpets*—not other surfaces. To this end, the challenger argued, the advertiser's vacuums are equipped with stiffer bristle bars that beat carpeted surfaces harder than the challenger's more gentle vacuum cleaners. The challenger further argued that this difference in design, while giving the advertiser an advantage with respect to ASTM testing, results in greater wear to consumers' carpeting. As evidence, the challenger submitted testing purportedly showing that the WindTunnel tears three times as many carpet fibers out of carpets as compared to the challenger's DC07 vacuum cleaner.

Moreover, the challenger argued, the ASTM standard in no way reflects a vacuum cleaner's performance on the wide variety of surfaces found in today's homes. Specifically, the challenger noted that according to the NPD Households Floor Covering Reports, only 37.8% of flooring sold in 2005 in the U.S. is carpet; the remaining 62.2% is hard floor. In addition, the challenger contended that vacuums are frequently used to clean a variety of non-floor surfaces.

In contrast to the ASTM standard, the challenger noted, IEC tests vacuums on a range of surfaces and debris types, and also tests for suction power. The challenger noted that the IEC standard was developed by the industry over the course of many years to evaluate the performance of vacuum cleaners under consumer relevant circumstances. The "Scope" section of the IEC standard states: "This International Standard is applicable to vacuum cleaners for household use in or under conditions similar to those in households." The challenger further argued that the advertiser's decision to ignore the IEC test standard is troubling, given the advertiser's participation in IEC committees and its acknowledgment (on product packaging) of the importance of a vacuum's ability to clean surfaces other than carpet. One packaging panel clearly states that other "performance factors" relevant to a vacuum's "cleaning performance" include "hose power,...surface litter cleaning, hard floor cleaning, edge cleaning, cleaning width and air filtration." The challenger noted that these are precisely the factors taken into account by the IEC test and ignored by the ASTM standard.

Finally, the challenger took issue with a consumer survey submitted by the advertiser. This survey, conducted by The Good Housekeeping Institute, was submitted to show that "cleaning

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ability on carpets" is the most important attribute to consumers who are considering purchasing vacuum cleaners. The challenger raised several questions about the reliability of the polls, noting that the advertiser failed to supply even the most basic information about the test methodology.

(ii) The WindTunnel's Performance on the IEC Tests

The challenger disputed the advertiser's claim that its vacuum cleaners out-clean all other vacuums arguing that its own Dyson machines perform better than the WindTunnel on wood floors with crevices and on Wilton carpet. (In its second submission, the challenger also included test showing the vacuum cleaners' respective performance with respect to the other three floor surfaces specified by IEC.) Specifically, the challenger noted that the DC07 has an 85.5% pick-up efficiency on wood floors with crevices and 78.1% on Wilton carpet; the DC14 has a 94.6% pick-up on wood floors with crevices and 82.3% pick-up on Wilton carpet; whereas the WindTunnel has only a 21.9% pick-up on wood floors, and an 80.7% pick-up on Wilton carpet. The challenger noted that its Dyson machines outperform WindTunnels when all floor types are averaged together.

(iii) The WindTunnel's Performance Declines With Use

The challenger further objected to the advertiser's reliance on ASTM F608 to support its WindTunnel superiority claim on the grounds that ASTM testing is performed on brand new vacuums with new drive belts and new bristles. The challenger noted that consumers continue to use their vacuum cleaners for years after their first cleaning, and argued that the WindTunnel's performance rapidly declines with use. The challenger pointed to testing purporting to show that the pick-up efficiency of the WindTunnel to decline as dust enters the vacuum. In particular, the pick-up efficiency of a dust-loaded WindTunnel decreased 71% on wood floors with crevices, 38% on level loop carpet, 10% on plush carpet, and 8% on Wilton carpet. When averaged across all four surfaces, the pick-up efficiency of the dust-loaded WindTunnel decreased 25%.

Likewise, the challenger argued that the WindTunnel's performance declines as its drive belt ages. The challenger submitted testing that compared a brand new replacement belt with an original belt that had not been significantly used for six months, and that of an original belt that had been used for 300 hours. The testing found that the new belt transmitted the most power (about 200 watts), while the 6-month old belt showed a slight reduction in power, transmitting about 190 watts. The belt that had been used for 300 hours was shown to transmit only about 170 watts—15% less than the new replacement belt. The challenger contended that this reduced power due to belt wear results in decreased performance.

Similarly, the challenger maintained that the WindTunnel's performance decreases as its bristles wear. On this point, the challenger submitted testing showing the bristle wear of its own DC07 vacuum cleaner and the WindTunnel after 200 hours of use on plush carpet. After 200 hours of use, the challenger noted, the WindTunnel's bristles decreased by 86%, reducing pick-up performance by 18%.

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(b) The Advertiser's Claim that the WindTunnel Cleans 56% Better Than the Dyson Vacuum

Dyson challenged the accuracy of a claim made in print advertising and on the advertiser's website and online brochure that the WindTunnel "cleans carpet 56% better" than the challenger's vacuum. Likewise, the challenger took issue with the television commercial claims that the WindTunnel "cleans carpet 56% better" than the challenger's vacuum and more generally that it "cleans better" than the challenger's machine. The challenger also noted the hangtag claims that "Patented WindTunnel Technology™ picks up over 56% more dirt than Dyson DC-14" and "Picks up over 56% more dirt."

The challenger maintained that the WindTunnel does not in fact perform better, let alone 56% better, than the Dyson DC07 or DC14 vacuums. Here again, the challenger noted that its Dyson vacuum performed better than the WindTunnel when tested according to the IEC standard, and when the results of the ASTM and IEC testing are averaged across all surfaces.

The challenger further objected to the advertiser's statement that "These results are based on ASTM International F608, the only recognized industry standard representing real-life conditions in American homes."⁷ As argued above, the challenger contended that in fact the ASTM test is *not* the only industry-accepted standard, and that the IEC test is in fact broader and more comprehensive. Moreover, the challenger contended that the advertiser's reference to ASTM fails to inform consumers about the limitations of the test—namely, that it is limited to removing fine test dirt from certain types of carpet only. The challenger added that consumers are generally not familiar with ASTM testing standards, and that 77% of respondents in the above-discussed consumer perception survey took away an overall superiority message, rather than a narrow claim that the WindTunnel tested better in removing one type of dirt from certain types of carpet. Nor does the advertisement inform consumers that the test was performed on a brand new, empty vacuum cleaner with a new drive belt and new bristles. Here again, the challenger noted that the WindTunnel loses both suction power and pick-up efficiency in a dust-loaded vacuum.

(c) Claim that the Fusion Out-cleans the Dyson Vacuum by 13%

Dyson also challenged advertiser's claim that its Fusion vacuum "outcleans Dyson by 13%." This claim is accompanied by the disclaimer: "Outcleans Dyson models DC07, DC14, and DC15 (The Ball™); proven in tests per ASTM International F608, the only recognized industry standard representing real-life conditions in American homes."

The challenger reiterated its argument that ASTM is not the only recognized industry standard, and that this test does not account for a wide variety of floor surfaces. Moreover, as discussed in reference to the WindTunnel vacuum, the challenger argued that the Fusion's performance rapidly declines as dust enters the vacuum cleaner and the drive belt and bristle bar wear down as

⁷ This disclaimer on the television commercial is "It's proven by the only recognized test representing real-life conditions in American homes."

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a result of normal use. The challenger submitted test results showing that the Fusion's suction power dropped 24.8 airwatts—or 13.2%—when repeat-loaded to a cumulative total of 1200 grams of dust.

Finally, the challenger argued that the Fusion has “astonishingly high” dust emissions. Specifically, the Fusion emits 0.1596% of the collected dust back into the air, which means its filtration method is only 99.8404% effective. As such, the challenger noted, the Fusion releases 1596 times more dust into the air than the Dyson DC07 and DC14 vacuums.

V. The Advertiser's “Pick-Up Efficacy” Claims

The challenger took issue with numerous “pick-up efficacy” claims, including: (i) product packaging claims that “WindTunnel Picks Up More Dirt Than Any Upright...Period” and “WindTunnel Picks Up Over 70% More Dirt”; (ii) print advertising claims that the WindTunnel “Picks up more dirt than any other brand!”; (iii) radio advertising claim that “The Hoover Self-Propelled WindTunnel Vacuum has been proven to extract more embedded dirt than any other upright”; (iv) a Sears brochure claiming that the WindTunnel “Picks up more dirt than any other bagless upright!”, “Picks up more dirt than any other clean-air upright!” and “Picks up more dirt than any other upright!”, and (v) a hangtag claiming that “Patented WindTunnel Technology™ picks up more dirt than any other brand, including Dyson.”

The challenger argued that its own testing shows that when averaged together, the pick-up for various vacuum cleaners on the market today ranges from 52.3% to 77.8%, whereas the WindTunnel only had a 66.3% pick-up efficacy. The challenger also noted that for the many reasons outlined above, the advertiser's reliance on the ASTM test—to the exclusion of the IEC standard—was misguided.

VI. The Advertiser's Claims that WindTunnel Technology Provides Superior Cleaning Performance and Use of the Cyclone Logo

The challenger also took issue with the advertiser's claim that the WindTunnel technology provides superior cleaning performance, and with its depiction of a cyclone on the WindTunnel packaging and on the product itself. The challenger argued that contrary to the name “WindTunnel,” the cyclone graphic, and the advertiser's superiority claims, WindTunnel technology is *not* cyclone technology. The challenger explained that unlike its own cyclone filtration technology, the advertiser's WindTunnel technology has absolutely nothing to do with the vacuum's method of filtration. Rather, the challenger noted, WindTunnel technology is limited to the vacuum cleaner's head.⁸ To demonstrate the ineffectiveness of the WindTunnel technology, the challenger devised a test in which the pick-up of the WindTunnel vacuum with WindTunnel technology was compared to the pick-up of the WindTunnel vacuum without WindTunnel technology. This test purportedly showed that with the WindTunnel technology, the vacuum has an average pick-up of 75.0%, whereas without the technology, the vacuum has an

⁸ The challenger further explained the WindTunnel technology diverts some of the air under the cleaner head into a tunnel running over the top of the bristle bar into a channel running across the front of the vacuum to create a suction in front of and behind the bristle bar.

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average pick-up of 72.5%. Thus, the challenger argued, the use of WindTunnel technology increases pick-up by a mere 3.5%—an amount that would go unnoticed by consumers. For these reasons, the challenger contended that the advertiser's superiority cleaning claims as well as its use of the cyclone logo are false and misleading.

VII. Implied Claim that the WindTunnel does not Lose Suction

The challenger argued that the claim "Twin Chamber Bagless System helps maintain maximum cleaning power," which appears in the Sears brochure for the WindTunnel, implies that the WindTunnel does not lose suction. The challenger previously noted that WindTunnel was shown to lose significant suction power when tested in accordance with the IEC dust-loaded test. The challenger further noted that the bagless WindTunnel—which is the model being promoted in the materials at issue—loses suction much faster than the bagged model. The challenger also argued that the very design of the advertiser's bagless WindTunnel vacuum—barrier filtration that utilizes a paper filter—results in a loss of suction power. Specifically, the challenger explained, dust and dirt clog the paper filter and prevent air from flowing, thereby reducing suction.

VIII. Claim that the Fusion Does Not Lose Suction

The challenger also objected to the claim, appearing on product packaging, the advertiser's website, the Fusion Owner's Manual, and the online Fusion brochure, that the Fusion offers "NO LOSS OF SUCTION," that "Cyclonic technology offers powerful cleaning with no loss of suction," and that the Fusion has "incredible cleaning power—every time you use it."

Here again, the challenger noted that due to the very design of the advertiser's vacuums, in which dirt and dust can clog the pores of the filter, suction is reduced with repeated use. While the challenger acknowledges that the Fusion maintains relatively constant suction power when the machine is *not* loaded with dust, the challenger contended that its testing shows that the Fusion does so by emitting 1596 times as much dust and dirt as the advertiser's vacuum.

The challenger also took issue with the disclaimer that appears with certain "no suction loss" claims: "Suction stays constant after picking up 10 ounces of dirt, as tested by an independent laboratory using ASTM F558 test method and a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material." As discussed above, the challenger argued that the results of a narrow ASTM test do not support the advertiser's broad claims. The challenger also contended that this test does not measure a vacuum's performance over time, and that contrary to the advertiser's disclaimer, the test does not use any dust at all. Nor, the challenger added, does the test measure dust emissions from vacuums.

IX. Dirt Disposal Claims

The challenger also took issue with the advertiser's dirt disposal claims. Specifically, the challenger argued that the advertiser's touted "no-touch" filter cleaning for its WindTunnel vacuum is false, because in order to clean the paper filter, consumers must remove the filter by hand and spin it against an attached piece of plastic to remove the dust and dirt. Likewise, argued

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the challenger, consumers must replace the vacuum's filter by hand. The challenger further objected to the advertiser's claim that the WindTunnel and the Fusion dirt cups are clean and hygienic to empty. The challenger noted specifically the advertiser's claim that the Fusion involves "No Mess!" and that the WindTunnel offers "hygienic dirt disposal." In reality, the challenger argued, in order to empty the advertiser's vacuums' dirt cups, consumers must open the dirt cups and empty the loose dirt and dust into a garbage can. The challenger maintained that this process results in dirt flying into the hands and face of the consumer, and offered as evidence two demonstrations showing how this happens.

X. Total Allergen Filtration Claims

The challenger argued with the advertiser's claims that a number of its vacuums offer total allergen filtration. Specifically, the challenger drew NAD's attention to the claim on the WindTunnel brochure that "Allergen Filtration traps 100% of dust mites, ragweed and common grass pollens," as well as the claim on WindTunnel product packaging that "Allergen Filtration traps 100% dust mites, 99.98% ragweed and common grass pollens."

The challenger argued that these health claims overstate the capabilities of the advertiser's vacuums. As discussed above, the challenger maintained that the advertiser's vacuums emit more dust into the air than the average vacuum cleaner, and that this results from their below-average filtration systems. The challenger added that it is dust mite *feces* that people are allergic to—not dust mites themselves. Therefore, the challenger argued that trapping the insects themselves would have little to no effect on allergies. Finally, the challenger noted, there are many allergies in American homes aside from dust mites, ragweed, and grass pollens.

Advertiser's Position

I. Background

The advertiser informed NAD of pending patent litigation which was filed prior to the NAD challenge and involves similar issues. According to the advertiser, NAD should not assert its jurisdiction over the comparative cleaning performance claims at issue, as doing so would invite the possibility that NAD and the court would issue conflicting decisions regarding cleaning superiority claims made by parties to this challenge.

Additionally, the advertiser disputed the challenger's contention that the advertiser confined its initial response to the Self Propelled WindTunnel vacuum cleaner. In fact, the advertiser argued, the ASTM F608 test results it submitted clearly establish that both the Self Propelled WindTunnel and the Bagless Self Propelled WindTunnel vacuum cleaner pick up 56% more dirt than Dyson, and that all bagless WindTunnel models also out-clean Dyson. The advertiser further argued that the challenger failed to refute the advertiser's testing for any Hoover models other than the Self Propelled WindTunnel vacuum cleaner (bagged and bagless models) and the Hoover Fusion upright vacuum.

II. The Advertiser's Performance Claims

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The advertiser argued that its independently supervised tests, conducted pursuant to ASTM F608, prove that its Hoover Self Propelled WindTunnel cleans carpet better than Dyson vacuum cleaners by at least 56%.

a. The advertiser's testing demonstrates that Hoover WindTunnel vacuums out-clean Dyson vacuum cleaners

The advertiser contended that the primary reason consumers purchase upright vacuum cleaners is to clean their carpeting and rugs, and that carpeting and rugs account for roughly two-thirds of the total floor covering market in the United States. Accordingly, the advertiser argued, the ability of a vacuum to clean carpets is the most meaningful measure of how well the machine works.

The advertiser's independently supervised testing, which used the ASTM F608, tested each of the upright Hoover WindTunnel vacuum cleaners against the Dyson DC07 model and the Dyson DC14. The advertiser's test results show each of its vacuums outperforming the Dyson models by at least 49.5%, and as much as 70.5%. The advertiser also tested Dyson's newest model, the DC15. According to The advertiser, the DC15 performed a near parity with the DC07, and therefore is also outperformed by the upright Hoover WindTunnel vacuums.

b. Consumers Union Agrees That Hoover WindTunnel Vacuum Cleaners Outclean Dyson Vacuum Cleaners

The advertiser noted that Consumers Union reported generally similar results to those demonstrated by the advertiser's independently supervised ASTM F608 tests. Consumers Union rated two Hoover WindTunnel models as "excellent" for carpet cleaning, while it rated the Dyson DC07 and DC14 as merely "good"—the lowest rating given to any of the 33 vacuum cleaners tested. The advertiser contended that these results confirm the superior cleaning ability of the Self Propelled WindTunnel.

c. ASTM F608 is the appropriate standard

ASTM F608 is a testing standard that evaluates the effectiveness of household and commercial vacuums for the removal of carpet-embedded dirt. According to the advertiser, it is the only method recognized in the United States for testing the cleaning efficacy of an upright vacuum cleaner. The advertiser also maintained that ASTM F608 is the American National Standard, as recognized by ANSI, which means that this standard takes precedence over the IEC 60312 procedure for evaluating carpet cleaning in the United States. The advertiser reasoned that since upright vacuum cleaners (such as the Hoover and Dyson models involved in this challenge) are primarily purchased by consumers to clean carpets and rugs, and since carpeting accounts for

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roughly two-thirds of the total floor-covering market in the United States,⁹ the ASTM F608 is the most consumer relevant measure for testing upright vacuums.

The advertiser then compared the ASTM F608 to the IEC 60312—the standard used by the challenger. According to the advertiser, there are several differences between the two testing procedures which support the advertiser's argument that the ASTM F608 is the more accurate and more relevant test method.

First, explained the advertiser, ASTM F608 procedure correlates to actual field results in American homes,¹⁰ whereas IEC 60312 was not based upon field studies. ASTM F608 requires that the carpets and padding used in the testing conform to ASTM F655, which requires the use of multiple carpets representing the major styles found in American homes. Conversely, the IEC 60312 only uses Wilton wool carpet, which according to the advertiser, has been criticized by members of the IEC and the European Carpet Association ("ECA") because it is not representative of current carpets. According to the advertiser, ASTM F608 has an established statistical precision statement which details expected repeatability and reproducibility errors unlike the IEC test which has a "lack of reproducibility between laboratories and materials."¹¹ The advertiser explained that ASTM vacuum cleaner test methods require a minimum of three units per each tested model, each of which must meet the repeatability requirements. Furthermore, unless a 90% confidence interval for the units is less than 5% of the sample mean, additional units must be tested. The advertiser points out that the IEC method only requires testing of a single unit of any given model to determine a representative value for the entire population. Finally, argued the advertiser, ASTM F608 has specific rules for determining when a test carpet must be replaced. The advertiser argued that because the IEC test leaves carpet replacement up to the individual laboratory it creates the possibility for massive reproducibility errors between laboratories.

The advertiser also rejected the challenger's assertion that Dyson's testing, which combines the averages of both ASTM and IEC based tests, is more consumer relevant than the "well established standard" used by the advertiser.

Finally, the advertiser submitted consumer research conducted by *Good Housekeeping* magazine, which was conducted between June and October of 2005 at the request of the ASTM F11.93.05 Task Group to "determine what attributes of a vacuum cleaner were the most important influences in making a purchase decision." The research consisted of three separate surveys which the advertiser argued "confirmed that cleaning ability on carpets was the most important attribute to consumers and that the cleaning ability on bare (hard) floors was either 6 or 7 out of the 8 attributes."

⁹ Carpet and Area Rugs account for 66.8% of the floor covering sales by volume. *Floor Covering Weekly*, July 18/25, 2005.

¹⁰ The advertiser explained that ASTM F608 was based upon 27 field studies in which numerous vacuum cleaners were tested side-by-side in 25 houses per study, for a total of 675 homes. Additional field studies have been conducted since then to insure that the field conditions have not changed the correlation that was established between the laboratory and the field.

¹¹ Advertiser's Final Response, Page 7, ¶2.

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d. Dyson's testing is unreliable and does not represent actual consumer use in the U.S.

The advertiser raised several issues with the challenger's test procedures as well as the accuracy and consumer relevance of the test data. According to the advertiser, the challenger's testing included ASTM F608 tests on two of the four carpets specified by ASTM F655, along with the IEC hard surface crevice test and the IEC embedded soil removal test.

The advertiser contended that the challenger's tests were neither conducted nor supervised by an independent third party. The advertiser also asserted that the challenger did not follow proper testing procedures, or "good laboratory practice." The advertiser further objected to the challenger's use of only two of the four carpets required by the F608 test;¹² the challenger's failure to perform head-to-head performance evaluations;¹³ the challenger's failure to meet strict statistical accuracy requirements of the F608, and the fact that the challenger's testing occurred over a five-year period. By conducting the tests over a period of five years, the advertiser argued, the challenger's testing utilized different carpets, dust supplies, and materials. The advertiser further argued that the challenger utilized different technicians, and changed the environments in which it evaluated the products' performance. According to the advertiser, these factors would impact the test results to a great degree and therefore render the test inaccurate.

Although the advertiser did not believe that the IEC 60312 test is relevant to consumers in the United States, it ran its own IEC 60312 testing. The advertiser averred that it conducted the IEC 60312 properly (head-to-head testing with the challenger's products, using the same technician, carpet and dust supply for all tests) and demonstrated that the WindTunnel outperformed each of the Dyson units. (The Self Propelled WindTunnel (U6439-900) achieved percent clean score of 88.5%, whereas the Dyson DC07, DC14, and DC15 received scores of only 79.1%, 78.3%, and 70.0% respectively.

According to the advertiser, three additional tests (a dust removal test from hard surfaces, a litter removal test, and an edge cleaning test) exist under the IEC 60312 standard, yet were not submitted to NAD by the challenger until the challenger's second submission. With respect to the timing of this testing, the advertiser noted that Section 2.4(C) of the NAD/NARB/CARU Procedures specify that a challenger is required to include in its initial challenge any data on which it intends to rely. As to the testing submitted to NAD in the challenger's original challenge, the advertiser argued that the crevice test chosen by the challenger uses a slot which is 1cm deep and 3mm wide and is most representative of a crack that would occur between two hardwood floor boards. The advertiser further asserted that the challenger failed to explain how

¹² According to the advertiser, the ASTM F608 requires that the testing include four carpets which are specified in the ASTM F655 standard. The ASTM F655 is the Standard Specification for Test Carpets and Pads for Vacuum Cleaner Testing. The ASTM F608 test method specifies that carpets and padding conforming to Specification F655 be used.

¹³ The advertiser asserts that all ASTM and IEC vacuum cleaner performance test methods are intended to be head-to-head performance evaluations. The advertiser also asserts that the Dyson test results cannot be compared because they were not conducted head-to-head. See Sonex Corporation, NAD Case Reports, Case No.3656 (May 2002).

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this surface is relevant to typical consumer use or what type of surface it is intended to represent, and that the July 18-25 issue of *Floor Covering Weekly* shows hardwood floors as representing 3.6% of total floor covering sales by volume. The advertiser stated that the majority of hard floor surfaces in the United States are smooth and therefore would be better represented by the IEC Dust Removal Test. The advertiser argued that of all of the IEC standards, the omitted tests were the most relevant to consumer use.

The advertiser concluded that the challenger's combination of the Wilton Carpet Test (based on a carpet that is not used in the United States), the IEC Crevice Test, and two of the four required ASTM Tests was created to achieve a favorable outcome for its products' performance.

e. Dyson's Claim That Hoover Vacuums Will Tear Out Carpet Fibers is False and Irrelevant To This Challenge

The challenger created a test to show the "destructive" nature of the Hoover WindTunnel and other American vacuum cleaners compared to its DC07. The advertiser noted that this test utilized an English carpet consisting of 80% wool and 20% nylon, and argued that only two out of 3,275 different styles listed in the Carpet Directory Database for the fall of 2004 come close to matching this style in the United States. The advertiser further noted that because the carpets in England "do not hold up as well" as American carpets, the brushes used in its European models generally have less aggressive bristles.

The advertiser also argued that the DC14 and the DC15 are absent from this analysis, as is any indication of how or when the test was conducted. Assuming that the test was conducted on a continuous basis for 1,000 double strokes at 0.5 m/s over a stroke length of 1.2 m, the advertiser reasoned that the units were operated for 80 continuous minutes. The advertiser maintained that an 80-minute operation of continuous vacuuming over the exact same area in a home is highly unlikely. Finally, the advertiser noted that the preparation of the carpets is unknown.

f. The Hoover WindTunnel Continues to Outclean the Dyson Vacuum Even After Years of Use Under Typical Household Conditions

The advertiser defended its reliance on the industry-approved ASTM F608 test despite the challenger's contention that the WindTunnel's performance declines with use. The advertiser maintained that *both* parties' testing demonstrates that the WindTunnel outperforms the Dyson even after being loaded with dust. Moreover, the advertiser emphasized that ASTM F608 is the agreed-upon industry standard for measuring the comparative cleaning efficacy of vacuum cleaners. While acknowledging that the performance of every vacuum cleaner declines to some degree with use, the advertiser maintained that this fact does not invalidate the ASTM F608 standard or the claim that Hoover vacuums outclean Dyson vacuums.

(i) Dyson's test results are flawed and its testing is not consistent with IEC 60312

The advertiser noted that the challenger used testing from different years, conducted by different technicians, and did not test units head-to-head. In addition, the advertiser charged that the

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challenger deviates from the stopping points that have been agreed to by the IEC task group and that will be included in the next draft of the IEC 60312 standard. The three stopping points specified by this standard are: (i) when the dust reached a maximum fill line or a bag check indicator activated; (ii) when 50g of dust per usable liter has been fed into the system; and (iii) when the suction reached 40% of its initial value. The advertiser maintained that throughout all of the challenger's testing for the loaded dust receptacle, the second stopping point of 50g per usable liter has been repeatedly ignored. The advertiser speculated that the deviation from this stopping point was clearly intended to overfill competitive products so as to create an unrealistic condition to prove a cleaning superiority that does not exist. In summary, the advertiser argued that the challenger's test results should be given no weight except to the extent that they demonstrate that the WindTunnel units tested continue to outperform the Dyson units even when the suction power of the former machines is reduced to 40%.

(ii) The Advertiser's Testing Confirms that WindTunnel Units Outclean Dyson Units Even When Suction Power is Reduced to 40% Of Its Original Suction

The advertiser conducted additional independently supervised testing pursuant to ASTM F608 to evaluate the embedded soil removal capability of the Hoover SelfPropelled WindTunnel (bagged and bagless) vacuum cleaners, as well as the Hoover Fusion upright vacuum, against the Dyson units under dust-loaded conditions (the "Loaded Dust Receptacle Test"). The Hoover Self-Propelled vacuum cleaners were restricted to the worst-case scenario of 40% of the initial suction. The data clearly showed that even when "clogged" to 40% of its initial suction value, the WindTunnel cleans better than any of the Dyson upright vacuums.

(iii) The Challenger's Power Transference Test Actually Demonstrates That The Self Propelled WindTunnel Maintains Most Of Its Power After Years Of Ordinary Use

The advertiser disputed the challenger's argument that the belts of WindTunnel upright vacuum cleaners wear out and result in reduced performance. Dyson created a test to measure the power transference of the belt as it ages. This test consisted of operating a single Self Propelled WindTunnel Bagless vacuum in a reciprocator and then periodically disassembling this unit to gain access to the belt. The advertiser noted that the belt when first measured transferred 200W of power—and that after 300 hours it continued to transfer 170W of power. The advertiser argued that the technician/engineer who wrote the report seemed impressed to find that "There is considerable physical degradation in the belt that has run for 300 hours however it is still capable of transmitting 170 Watts." (emphasis added by the advertiser.) The advertiser added that 300 hours of use represents approximately 10 years of use. The advertiser further noted that the technician stated that the loading of the belt would be quite different if done at home from that in the test. Finally, it noted that no effort was made to determine the effect on cleaning of this purported 15% reduction in power transfer. Thus, the advertiser argued that the Dyson test is unreliable, irrelevant to consumer use, and meaningless.

(iv) The Challenger's Bristle Wear Test is also flawed, but demonstrates the superior cleaning efficacy of the WindTunnel

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The advertiser also took issue with the challenger's bristle wear test. The challenger's technicians operated a WindTunnel of unknown model in a continuous pattern in an automated reciprocator for 200 hours, measuring the embedded dirt removal capability per ASTM F608 every 50 hours and compared it to a Dyson DC07 undergoing the same test. The advertiser noted that at 50 hours, when a reduction in penetration of 2.5 mm for the WindTunnel was measured, the pick-up was reduced by 7.5 g, but after 100 hours, when the bristle penetration was reduced an additional 1.2 mm, the pick-up increased by 8.1 (the highest value during this test.)

Moreover, the advertiser argued that this data actually demonstrates that the air watts for the WindTunnel increased by 50% and the Dyson decreased by 14%. Thus, to the extent these results can be trusted, the advertiser claimed, the data actually shows an improvement in the performance of a WindTunnel over time, and a loss of suction for the Dyson DC07 over time. A 14% change in air power is outside the range of test error for the ASTM F558 procedure.

Finally, the advertiser noted that because the average usage of a vacuum cleaner in an American home is 30 hours per year, a 200 hour test represents approximately six years and eight months of use. Accordingly, the advertiser argued that the challenger's test demonstrates that even after approximately 6 years and 8 months, the WindTunnel still cleans better than the Dyson DC07 by a normalized value of 40.4%. The advertiser also noted that the carpet used for this test was a UK carpet, and that according to the test technician, U.S. carpets tend to have a longer pile and therefore less bristle wear should occur.

III. The Advertiser's Commercial

In response to the challenger's contention that the television commercial is misleading, the advertiser stated that the commercial's only express claim (that the self propelled WindTunnel out cleans Dyson) is true. The advertiser also argued that to the extent that the claims could be interpreted as communicating that Dyson vacuums loose suction, this is also true.

According to the advertiser, there is nothing about the commercial which implies that the product is ineffective or which is disparaging to the product. Rather, it insisted that the message implied is that when choosing a vacuum, consumers should be concerned with its cleaning performance rather than its color. It argued that the consumer data submitted by the challenger does not support its argument. Furthermore, the advertiser insisted that the NAD cases cited by the challenger are distinguishable from the instant proceeding because the advertisements here at issue are not focused on any particular flaw of the challenger's product—but instead concentrate on the superiority of the advertiser's product. According to the advertiser, the responses provided by the challenger from its consumer perception survey show that those who saw an implied performance message took away a comparative superiority message. The advertiser insists that the statement: "Dyson thinks things should work properly. We couldn't agree more," (which is immediately followed by: "That's why our Hoover Self-Propelled WindTunnel picks up 56% more dirt than Dyson") is not interpreted by the reasonable consumer to mean that the one product is ineffective. Rather, the advertiser maintains that such a statement is taken to mean that one product is more effective than the other. This statement, according to the advertiser, implies

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that the Hoover WindTunnel cleans *better* than the Dyson vacuum cleaners, and is substantiated by the data provided.

IV. Other Challenged Claims

a. The Advertiser Does Not Claim that the WindTunnel Does Not Lose Suction

The advertiser took issue with the challenger's argument that the statement "Twin Chamber Bagless System helps maintain maximum cleaning power" implies that the WindTunnel does not lose suction. The advertiser noted that the challenger offered no support for this claim, and contended that the challenger confuses cleaning power with suction power. The advertiser maintained that suction power is *only one* element of cleaning power, and that a vacuum can offer maximum cleaning power even without maintaining its full suction power.

In fact, the advertiser noted, the WindTunnel vacuum cleaners with *full* bags and dirt cups clean better than the challenger's machines with *empty* dirt cups. In support of this statement, the advertiser pointed to an independently supervised internal test demonstrating that the Self Propelled WindTunnel uprights (bagged and bagless) clean better than the challenger's DC07, DC14, and DC15 vacuum cleaners. Although the cleaning effectiveness of the WindTunnel units drops as suction power declines, the advertiser emphasized that the cleaning effectiveness of the WindTunnel never drops below that of the challenger's machines. Accordingly, the advertiser argued that the Twin Chamber Bagless System does indeed help maintain maximum cleaning power.

b. The Claim that the Hoover Fusion Does Not Lose Suction is True and Properly Qualified

The advertiser noted that its "Does not Lose Suction" claim is qualified by language appearing directly beneath the claim, stating: "Suction stays constant after picking up 10 ounces of dirt, as tested by an independent laboratory using ASTM F558 test method and a dirt composition composed of 70% mineral dust and 10% fibrous material." The advertiser submitted testing to this effect. This disclosure, argued the advertiser, renders this claim qualified and substantiated.

c. The WindTunnel Has a "No-Touch" Filter and Dirt Cups

The Self Propelled WindTunnel Bagless Upright employs a two-chamber dirt cup with a lid. The lid has a small knob to allow the consumer to rotate the filter prior to opening the lid. The advertiser emphasized that in the course of typical cleaning, a consumer turns the knob prior to opening the lid, causing the filter still inside the dirt cup to rotate against a piece of plastic that causes the dust and dirt to fall off the filter and into the container. The consumer would then open the lid with her thumb while holding the cup's handle and pour out the dust and debris. The advertiser maintained that if individuals are removing the filter prior to spinning it, this is contrary to the instructions provided in the owner's manual. The advertiser did acknowledge, however, that there are times (such as when picking up large quantities of fine dust) that the filter

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may require a more thorough cleaning in which the filter is removed from the frame and tapped against the side of a dust bin to dislodge any remaining dust.

d. The WindTunnel Utilizes a HEPA Filter That Traps 100% of Dust Mites, Ragweed and Common Grass Pollens

The advertiser stated that its Self Propelled WindTunnel bagless utilizes a cartridge filter that is certified to meet the HEPA criteria of 99.97% efficient at 0.3 microns. The advertiser explained that this is the accepted criteria for HEPA in the United States and is also being pursued at ITC. Common pollen is generally between 15 and 25 microns. Dust mites are generally between 250 and 300 microns and even the dust mite allergens referred to by Dyson are generally between 10 and 20 microns. All of these allergens, the challenger noted, are significantly larger than 0.3 microns. Thus, the advertiser maintained, the HEPA filter on the Hoover will trap 100% of these allergens.

DECISION

Dyson challenged numerous performance claims and superiority claims made by the advertiser for its Hoover WindTunnel and Fusion upright vacuum cleaners. At the outset, NAD noted that both companies make effective upright cleaning products but rely on different kinds of testing to support their arguments and the performance capabilities of their respective products. A central dispute in this case involves the suitability of ASTM F608, the "Standard Test Method for Evaluation of Carpet Embedded Dirt Removal Effectiveness of Household/Commercial Vacuum Cleaners," as a basis for the advertiser's cleaning and "pick up" superiority claims. The advertiser argued that its testing, conducted pursuant to ASTM F608, supports its numerous cleaning superiority claims. The challenger, on the other hand, argued that ASTM F608 testing does not provide a reasonable basis for the challenged claims, and offered its own evidence to show that in fact its own Dyson vacuum cleaners outperform the Hoover units.

NAD is often called upon to review evidence of product testing based upon industry standards and then to assess the "fit" between the performance claims made by an advertiser and its supporting evidence.¹⁴ Even when product testing is based on sound testing methodologies and industry-recognized protocols, NAD will typically examine the correlation between the testing and the real world experience of consumers in determining if the advertising claims are supported by the evidence. It is against this backdrop that NAD considered the claims in the challenged advertising.

I. NAD'S Jurisdiction

NAD first considered the advertiser's argument that NAD should decline to exercise jurisdiction in this matter because a related dispute between the parties is simultaneously being litigated in

¹⁴ The Valvoline Company (Zerex G-05 Extended Life Antifreeze), Report #4375, *NAD Case Reports* (September 2005); Dow Chemical Company (Styrofoam Brand Insulation), Case # 4383, *NAD Case Reports* (August 2005); EuroPro-Corporation (Shark Bagless Stick Vacuum Cleaner), Case # 4216, *NAD Case Reports* (August 2004); Bausch & Lomb Incorporated (Renu), Case #4385, *NAD Case Reports* (August 2005).

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Federal District Court. *NAD Procedures* provide that if the advertising claims complained of are “the subject of pending litigation or an order by the court....NAD shall advise the challenger that complaint is not, or is no longer, appropriate for formal investigation in this forum.”¹⁵

After carefully reviewing the complaint in the federal court proceeding, NAD determined that the claims challenged by Dyson, for WindTunnel and Fusion vacuum cleaners were not themselves the subject of the pending litigation. Accordingly, NAD determined that *NAD Procedures* do not require NAD to close the case. NAD recognized that the District Court may be adjudicating matters related to the proceeding (i.e., making findings on the testing methods) but this circumstance is not one that should divest the self-regulatory forum of its jurisdiction or charge to ensure that advertising is truthful, non-misleading and adequately substantiated. Accordingly, NAD proceeded with its review of the challenged advertising.

II. The Issue of False Disparagement

A. Implied Claim in Television Commercial

NAD first examined the challenged television commercial featuring the following dialogue:

- “My vacuum is purple. They say it doesn’t loose suction.”
- “My vacuum makes me look good.”
- “My vacuum was in a fashion magazine.”
- “Dyson thinks things should work properly. We couldn’t agree more. That’s why our Hoover Self-Propelled WindTunnel picks up 56% more dirt than Dyson.”

The challenger argued that this commercial implies that Dyson vacuums are ineffective. In support of this argument, the challenger offered a consumer perception study which was completed by 265 adults throughout the United States over the age of 18, all of whom were actual or potential purchasers of vacuum cleaners. The respondents were asked open-ended questions about the overall message communicated by the commercial. 250 respondents (94%) knew the advertised brand was Hoover, and were asked questions about any messages communicated about the Hoover vacuum. 206 respondents (78%) were aware that the other brand in the commercial was Dyson, and were asked questions about any messages communicated about the Dyson vacuum. According to the challenger, 77% of the respondents surveyed took away superiority messages about Hoover vacuums, such as Hoover vacuums clean better than Dyson; Hoover is better than Dyson; Hoover is the best; and Hoover is better than the competition. Also according to the challenger, 46% of these respondents took away a variety of disparaging messages about the Dyson vacuum. After the survey was completed, the results were validated by an independent third-party validation company.

The advertiser argued that its commercial does not in fact imply that the Dyson vacuum is ineffective. It further contended that the consumer test data does not support the challenger’s

¹⁵ Section 2.2 (B)(i).

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position. The advertiser argued that the commercial simply implies that consumers should be concerned with cleaning performance when deciding which vacuum to purchase—not with the color of the vacuum cleaner. This message, the advertiser maintained, is one of comparative superiority—not disparagement. Moreover, the advertiser distinguished the NAD cases cited by Dyson, arguing that the advertising here at issue does not focus on any particular flaw with Dyson cleaners. Finally, the advertiser noted that not one respondent in the challenger's consumer test indicated that the commercial implied that the Dyson vacuum cleaner is "ineffective" or "does not work properly." Rather, the verbatim responses reveal that the vast majority of those respondents who took away a performance message took away a comparative superiority message that is supported by the advertiser's evidence.

NAD agreed with the advertiser that the commercial conveyed a message of comparative superiority—and did not falsely disparage Dyson vacuum cleaners by suggesting they were ineffective or did not work properly. In reaching this conclusion, NAD first carefully reviewed the consumer perception survey. As to the purported 77% of respondents who took away superiority messages from the commercial, NAD noted that this percentage is not indicative of "false disparagement." Advertisers are of course free to make superiority comparisons, provided that they are supported, against competing products.

The issue here is whether the advertiser falsely disparaged the challenger by conveying the message that Dyson vacuum cleaners are somehow ineffective. On this point, NAD concluded that the consumer perception survey did not support the challenger's position. Although the challenger argued that 46% of respondents surveyed took away disparaging impressions of Dyson vacuum cleaners, NAD's own review of the survey responses revealed that relatively few respondents who saw the commercial took away the message that Dyson vacuum cleaners are ineffective or that they lose suction. The questionnaire employed a technique of "funneling" in which open-ended questions were followed by more specific questions including questions that specifically asked respondents to focus on the individual statement: "My vacuum is purple, they say it doesn't lose suction." Although *some* respondents, in response to such questioning, took away disparaging messages about Dyson vacuum cleaners, NAD concluded that the overwhelming majority of respondents took away no such messages.

NAD's analysis of the survey respondents yielded results that were consistent with its own takeaway of the commercial. Even if consumer perception evidence is not reliable or dispositive of the issues, NAD is authorized to stand in the shoes of consumers and determine what reasonable messages are conveyed by an advertisement. NAD, based upon its review of the commercial, determined that the commercial conveys a clear message of cleaning superiority, but does not reasonably communicate a message that Dyson cleaners are ineffective when it comes to cleaning.

Moreover, NAD disagreed with the challenger's suggestion that the Hoover commercial is analogous to the advertising at issue in *The Clorox Company (Clorox Toilet Wand System)*.¹⁶ In *The Clorox Company*, the advertiser depicted its competitor's product as a ragged and useless

¹⁶ NAD Case # 4306 (April, 2005)

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object that blows away in the wind. Based on this depiction, NAD concluded that the advertisement conveyed that the competing toilet brush was “ineffective.” Unlike the *Clorox* commercial, the Hoover commercial does not show the competing product falling apart or otherwise breaking or failing to work.¹⁷ Rather, NAD determined that the Hoover commercial gently mocks its competition—but does not expressly or impliedly suggest that Dyson vacuum cleaners are ineffective.¹⁸

NAD concluded that the commercial conveys that the advertised vacuum cleaners outclean Dyson machines, and that, specifically, “the self-propelled WindTunnel by Hoover cleans carpet 56% better than Dyson.” NAD addresses the whether the evidence supports this cleaning superiority claim in Section IV of this decision.

B. Other Advertising

The challenger also took issue with two other Hoover advertisements it described as falsely disparaging.¹⁹ First, the challenger pointed to what it described as the “false and misleading claim in the Hoover print advertising for the WindTunnel that Dyson vacuums do not clean properly.” NAD presumes that the challenger is referencing the print advertisement that appears in Exhibit 3 of the challenge which reads “Dyson thinks things should work properly. We couldn’t agree more. That’s why our Hoover self-propelled WindTunnel picks up 56% more dirt than Dyson.” NAD concluded that this claim, similar to the above-discussed commercial, communicates that the self-propelled WindTunnel picks up more dirt than Dyson—but does *not* convey to the reasonable consumer that Dyson machines are ineffective or do not work.

Finally, the challenger took issue with a WindTunnel hangtag which reads, in relevant part: “Patented WindTunnel™ Technology picks up more dirt than any other brand, including Dyson. Some vacuums pick up dirt, only to scatter it back down into your carpet.” On this point, NAD agreed with the challenger that the challenged hangtag does indeed imply that Dyson vacuums—as the only competing vacuum mentioned by name on the hangtag—is among the vacuums that “scatter [dirt] back down into your carpet.” NAD noted that the record lacks any reliable evidence that demonstrates that Dyson vacuums scatter dirt onto carpet. Accordingly, NAD recommended that the advertiser discontinue the claim that “Patented WindTunnel™ Technology picks up more dirt than any other brand, including Dyson. Some vacuums pick up dirt, only to scatter it back down into your carpet.”

¹⁷ In *Clorox*, NAD also found that the advertiser provided no evidence that its own product cleaned toilets more effectively than the challenger’s. *Id.*

¹⁸ Likewise, NAD determined that the present advertising is not analogous to the advertising reviewed in *McNeil Consumer Healthcare (St. Joseph Adult Low-Strength Aspirin)* NAD Case # 3871 (February, 2002). Although the advertiser correctly cited *McNeil* for the proposition that “[e]ven an otherwise literally accurate statement may be misleading if it falsely disparages a competing product,” NAD concluded—for the reasons discussed above—that the instant commercial does not falsely disparage another product. Similarly, NAD determined that the Better Business Bureau’s *Advertising Review Handbook and Guidelines*, which prohibit false disparagement, were not violated by the advertiser’s commercial.

¹⁹ The challenger did not submit consumer perception research relating to these two advertisements.

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III. "These results are based on ASTM International Test F608, the only recognized industry standard test representing real-life conditions found in American homes."

The challenged performance claims include qualified language stating that ASTM F608 is "the only recognized industry standard test representing real-life conditions found in American homes." In support of this claim, the advertiser noted that ASTM F608 was developed with the cooperation of leading vacuum cleaner manufacturers, consumer organizations, academia, and general interest members, at the strong urging of the Federal Trade Commission ("FTC"). Moreover, the advertiser stated that F608 test methodology was based upon 27 field studies, in which numerous vacuum cleaners were tested side-by-side in 675 homes. It also noted that additional field studies have been conducted since the standard was originally established in the early 1970s, to insure that the standard remains current.

Given that the standard is indeed based upon ongoing field tests in which vacuum cleaners are tested in American homes, NAD was satisfied that ASTM F608 is indeed based upon "real-life conditions found in American homes." NAD then considered whether ASTM F608 is the "only" industry recognized standard that fits this description—or whether IEC 60312 is also a "recognized industry standard test representing real-life conditions found in American homes."

The challenger argued that the IEC 60312 is "equally accepted" as ASTM F608. In support of its argument, the challenger cited two NAD cases: *Euro-Pro Corporation (Shark Bagless Stick Vacuum Cleaner)*²⁰ and *Euro-Pro Corporation (Fantom Twister Vacuum Cleaners)*²¹, in which NAD determined that the advertiser's evidence, consisting of testing pursuant to ASTM F-55803, was not sufficient to support its suction claims. NAD was not persuaded by this argument. Contrary to the challenger's position, NAD did not opine in these cases as to the relative importance or reputability of ASTM F608 versus IEC 60312, nor did NAD find that "the two methods coexist side-by-side," or that they are "equally accepted." At most, NAD implicitly acknowledged that the IEC testing submitted by the challenger was not irrelevant to the issues it reviewed in that proceeding.

The challenger also argued for IEC's relevance by citing certain statements made by ANSI, ASTM, and the U.S. National Institute of Standards and Technology ("NIST") in which these bodies endorse the internationalization of standards. For example, the challenger noted ANSI's mission statement, which emphasizes the importance of global standards. The advertiser also pointed to recent minutes of the ASTM subcommittee on vacuum cleaners, in which the committee chairman discusses the goal of "bring[ing] together ASTM with relevant international standards." Finally, the challenger highlighted a statement made by the director of NIST, which stresses that "[b]oth government and the private sector in the United States have worked actively in the [IEC]."

While these statements perhaps make the case that American standards organizations seek to harmonize their own standards with those of the IEC, NAD noted that the question at issue here

²⁰ Case # 4216 (August, 2004)

²¹ Case # 4217 (August, 2004)

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is not whether the respective standards can be harmonized, but whether IEC 60312 currently qualifies as a "recognized industry standard test *representing real-life conditions found in American homes.*"²² NAD determined that the above-described statements by ANSI, ASTM, and NIST fall short of establishing that IEC 60312 is a recognized industry standard test "representing real-life conditions found in American homes."

The challenger's principle basis for the proposition that IEC testing standards represent "real-life conditions found in American homes" is a statement made by Mr. Capron-Tee, who is the chairman and member of various ASTM and IEC Committees and Sub-Committees relating to vacuum cleaner testing. The challenger relies upon Mr. Capron-Tee's statements that with respect to IEC testing, "the results obtained are representative of performance in the home," and that "the results show a proportionate performance in the home and can differentiate between the performance of different vacuum cleaners when used in the home." Mr. Capron-Tee also stated that "[t]his was tested against much field data collected from the USA and Europe." These representations directly contradict the statements made by the advertiser's expert, Mr. Miller, who stated that IEC 60312 does not correlate to any consumer studies.

NAD concluded that Mr. Capron-Tee's assertions that IEC 60312 represented (American) in-home vacuum cleaner performance were not sufficient to rebut the advertiser's claim regarding ASTM F608. First, NAD noted that Mr. Capron-Tee acknowledged that IEC test carpeting (Wilton carpet) is only found in a "tiny minority of homes," and that the dust used in the IEC testing is "also not found in many homes." NAD also noted the absence of any explanation (by the challenger or by Mr. Capron-Tee himself) as to how a test using both carpet and dirt that is found only in the minority of actual homes could accurately represent actual conditions in American homes. Mr. Capron-Tee's only basis for this argument was the bald assertion that "this was tested against much field data collected from the USA and Europe." Given the lack of supporting evidence as to the nature of this field data, or as to the proportion of this data that was collected, respectively, from the USA versus Europe (two regions in which carpet styles differ significantly), NAD concluded that Mr. Capron-Tee's statement was insufficient to establish that IEC standards correlate strongly with real-life conditions in American homes.

In contrast, the advertiser submitted detailed information as to the nature of the in-home field tests on which ASTM F608 was based. As discussed above, ASTM F608 was based on 27 field studies in which numerous vacuum cleaners were tested side-by-side in 675 homes.²³ Moreover, the advertiser provided NAD with a chart demonstrating the correlation between in-home field tests and ASTM laboratory tests. Indeed, the very language of ASTM F 608-9 reflects the fact that the standard is designed to be representative of American homes; Section 4.1 of F 608-9 reads, in relevant part: "This test method is based upon results of home cleaning tests so that, in most cases, a reasonable correlation exists between home and laboratory results." The language of IEC 60312 as quoted by the challenger, however, refers to no field testing whatsoever—no

²² Emphasis added

²³ Additional field studies have been conducted since F608 was originally established in the early 1970s to insure that the standard remains current.

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less field testing conducted primarily in American homes.²⁴ Accordingly, NAD concluded that the challenger did not overcome the advertiser's reasonable basis for its claim that ASTM F608 is "the only recognized industry standard test representing real-life conditions found in American homes."

Finally, the challenger maintained that "[a]ll of Hoover's advertising that states that the ASTM test is the only industry test to measure vacuum cleaner performance are... false on their face." Importantly, however, the claim presently at issue is not that ASTM F608 is "the only recognized industry standard test" for measuring vacuum cleaner performance—but that it is the only recognized industry standard "representing real-life conditions found in American homes." For the reasons outlined above, NAD found this claim to be properly qualified and supported.

IV. Cleaning Superiority Claims

In support of its numerous cleaning superiority claims as to both the WindTunnel and the Fusion, the advertiser submitted testing conducted pursuant to ASTM F608.²⁵ As a preliminary matter, NAD noted the parties' dispute as to whether the challenged superiority claims were limited to the Self Propelled WindTunnel, or whether they extended to other Hoover models as well. While it is true that some claims are limited to the Self Propelled WindTunnel, NAD observed that other claims clearly apply to other models. For example, as noted by the challenger, the claim "picks up more dirt than any other bagless brand" appears on product packaging for the Hoover WindTunnel Bagless. Likewise, the claim "picks up more dirt than any other upright... period," appears on packaging for the Hoover Self Propelled WindTunnel Bagless. Similar claims appear in catalogue advertising for the Self Propelled WindTunnel Bagless, the Self Propelled WindTunnel Ultra, the WindTunnel Bagless, and the WindTunnel Bagless Plus. Accordingly, NAD determined that the advertiser must not only substantiate its claims with respect to the Self Propelled WindTunnel, but must also provide evidence supporting those claims relating to other Hoover models.

A) The Advertiser's ASTM Testing

In support of its cleaning superiority claims as to both the WindTunnel and the Fusion, the advertiser submitted two independently supervised tests conducted pursuant to ASTM Test Method F608, the "Standard Test Method for Evaluation of Carpet Embedded Dirt Removal Effectiveness of Household/Commercial Vacuum Cleaners." The first test compared the challenger's DC07 and DC14 models against seven different models of Hoover vacuum cleaners.

²⁴ As quoted by Mr. Capron-Tee, the stated purpose of IEC 60312 is "to specify essential performance characteristics of vacuum cleaners being of interest to the users and to describe methods for measuring these characteristics."

²⁵ The evidence discussed in this section was offered as substantiation for numerous cleaning superiority claims—both general and specific—identified by the challenger, including: "Picks up more dirt than any other brand;" "outcleans all competitive bagless cleaners;" "clean to the highest power;" "picks up more dirt than any other brand;" "The Hoover Self-Propelled WindTunnel Vacuum has been proven to extract more embedded dirt from horizontal floor surfaces than any other upright." "The Hoover® Self-Propelled WindTunnel™ picks up 56% more dirt than Dyson." "The self-propelled WindTunnel™ by Hoover cleans carpet 56% better than Dyson." The Hoover® Fusion™ Cyclonic Bagless Upright Vacuum Outcleans Dyson by 13%"

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As prescribed by ASTM, all vacuum cleaners were tested on four different types of carpeting: plush, multi-level, shag, and level loop. The test also used dirt as specified in ASTM F608. This testing demonstrated that the advertiser's WindTunnel machines outcleaned the DC07 and the DC14 by at least 49.5% and by as much as 70.5%.

The second test, conducted several months later, compared the DC07, the DC14, and Dyson's recently introduced DC15 model—all with empty dirt cups—with Hoover WindTunnel vacuum cleaners operating with a full bag or dirt cup. This test, the advertiser noted, shows that the DC15 is no more effective at cleaning carpet than the DC07, and is significantly less effective at cleaning carpet than the WindTunnel vacuum cleaners tested in both tests.

As further support for its cleaning superiority claims, the advertiser noted that Consumers Union reported similar results to those found by its own ASTM F608 testing. The advertiser further noted that Consumers Union rated two models of Hoover vacuum cleaners "excellent" for carpet cleaning—while it rated the DC07 and DC14 models as merely "good."

The challenger disputed the appropriateness of ASTM F608 as substantiation for the challenged claims. First, the challenger noted that this standard only measures pick-up of test dirt on four types of carpeting, and does not measure pick-up on hard floor surfaces or other commonly vacuumed surfaces. The challenger also noted that ASTM F608 does not measure suction power, and that the standard only calls for testing to be performed on brand new vacuums with new drive belts and new bristles. For these reasons, the challenger contended that the advertiser must not only test its machines using ASTM F608, but must also test them against another industry standard: IEC 60312 "Vacuum cleaners for household use—Methods of measuring the performance."

In an NAD proceeding, the advertiser has the initial burden of presenting a reasonable basis for its claims.²⁶ Accordingly, NAD first considered the advertiser's evidence.

As a preliminary matter, NAD appreciated that ASTM F608 is a widely accepted industry standard that was developed with the cooperation of leading vacuum cleaner manufacturers, consumer organizations, and academia. NAD further noted that ASTM F608 is the American National Standard as recognized by the American National Standards Institute ("ANSI"). NAD too has recognized the legitimacy of ASTM F608 as a basis for cleaning superiority claims; In a previous proceeding, NAD determined that testing conducted pursuant to this standard constituted a reasonable basis for an advertiser's claim that its vacuum cleaner "gets more dirt out of a carpet than any other cleaner."²⁷

Indeed, ASTM F608 enjoys legitimacy for good reason. Based on in-home field tests, the standard incorporates a variety of methodological safeguards, such as requiring the testing of a minimum of three units for each model, the utilization of a statistical precision statement,²⁸ and the use of multiple carpets representing the major styles found in American homes.

²⁶ *Johns Manville (Formaldehyde-Free Insulation)*, Case # 4395 (October, 2005)

²⁷ *The Hoover Company (Vacuum Cleaners)*, Case # 3044 (August, 1993)

²⁸ The advertiser explained that ASTM F608's statistical precision statement details potential repeatability and reproducibility errors.

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The challenger, however, highlighted several purported limitations of ASTM F608, and argued that these shortcomings render the advertiser's testing insufficient to support its claims. As a preliminary matter, NAD noted that its task here was to determine whether the advertiser's ASTM testing provided a reasonable basis for its cleaning superiority claims—not whether the testing constituted “perfect” evidence.²⁹ With this standard in mind, NAD considered the challenger's criticisms in turn.

(i) *The Argument that ASTM F608 Only Calls For Testing on Carpeting*

First, the challenger argued that ASTM F608, which calls for testing only on carpeted surfaces (not on hard flooring or other non-carpeted surfaces), does not support the challenged superiority claims—which are not limited to carpet cleaning. The advertiser countered that consumers' primary reason for purchasing upright vacuum cleaners is to clean carpeting and rugs. Accordingly, the advertiser argued that the ability of an upright vacuum cleaner to clean carpets is the true and most meaningful measure of how well it works.

Both parties cited statistics to bolster their respective arguments about the importance of carpeting versus hard flooring. The challenger pointed to a report showing that only 37.8% of flooring sold in the US last year³⁰ consisted of carpet. The advertiser cited research suggesting that carpets and area rugs account for 66.8% of floor covering sales by volume. NAD determined that the statistical evidence submitted was not dispositive to the issue at hand, which concerns the purposes for which consumers use vacuum cleaners and the way in which they will interpret the challenged cleaning superiority claims. Statistics simply speaking to the relative percentages of carpeting and rugs versus hard flooring does not shed light on which of these floor surfaces vacuum cleaners are commonly used.

NAD also considered but was not ultimately persuaded by the three *Good Housekeeping* surveys that were submitted by the advertiser in an effort to show that carpet cleaning is most important to consumers of vacuum cleaners. As noted by the challenger, these surveys fell short in several methodological respects. The first poll received responses from only 14 out of 100 respondents and contained no information regarding test methodology—and no explanation of why the sample size was so small. The second poll was deemed “unusable” because “Respondents appeared to rate each attribute on a 1-8 scale individually rather than as part of one question.” Finally, in the third poll, the survey sample was not representative of the U.S. population with respect to variables such as gender, age, marital status, and education. Thus, to the extent that this consumer research was offered to show that consumers understand the challenged advertising claims to apply only to *carpet* cleaning, NAD was not persuaded.³¹

²⁹ As noted by the advertiser, NAD has held that “[i]n advertising claim substantiation, perfection is not required but, rather, advertising claim substantiation is based on a determination of whether an advertiser has provided a reasonable basis for its claims.” *The Valvoline Company*, NAD Case # 4375 (August 2005)

³⁰ The year ending in March, 2005

³¹ Moreover, NAD found that even if these polls had convincingly established that a vacuum cleaner's carpet cleaning ability ranks first in importance to consumers, such a showing would still not prevent consumers from taking away the unsupported message that the challenged superiority claims apply to all floor surfaces. Thus, even if

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It is well-established that there must be a good fit between an advertiser's claims and the evidence offered to support those claims.³² Thus, absent reliable consumer research demonstrating otherwise, NAD determined that the advertiser's unqualified cleaning superiority claims³³ did not sufficiently "fit" with its evidence, which was based on carpet cleaning alone. Accordingly, NAD recommended that the advertiser modify its cleaning superiority claims—both as to its WindTunnel and its Fusion—by disclosing that this claim applies only to carpeted surfaces.³⁴

(ii) The Argument that ASTM F608 Does Not Measure Suction

The challenger also argued that the ASTM F608 standard does not measure performance as well as the IEC 60312, because it does not measure suction. NAD was not persuaded by this argument. Although suction power is an important attribute in the design of vacuum cleaners (some more than others), NAD noted that the claims at issue here involve vacuum cleaners' ability to "pick up dirt," and "clean." Whether this cleaning ability is achieved via a vacuum cleaner's suction power, its bristle action, or by other means is not directly material to the claims at hand. Accordingly, NAD found that the advertiser's reliance on ASTM F608 was not fatally flawed on the grounds that the standard does not measure suction.

(iii) The Argument that ASTM F608 Only Calls For Testing on Brand New Vacuum Cleaners

The challenger also objected to the advertiser's reliance on ASTM F608 because this standard only tests vacuum cleaners in a brand new state. The challenger noted that consumers continue to use their vacuum cleaners for years after their first cleaning, and argued that the WindTunnel's performance rapidly declines with use. As support, the challenger pointed to (i) testing purportedly showing the pick-up efficiency of the WindTunnel declines, on average by 25%, as dust enters the vacuum; (ii) testing purportedly showing that the WindTunnel's performance

it were true that consumers are primarily concerned with a vacuum cleaner's carpet cleaning ability, consumers are still entitled to know the extent to which the advertiser's superiority claim is supported. Short of reliable and methodologically sound evidence showing that reasonable consumers would not interpret the advertiser's cleaning superiority claims to apply *only* to carpeted surfaces, the advertiser remains obliged to disclose that its claims are limited to carpet cleaning only.

³² *Avon Products, Inc. (ANEW Clinical Line and Wrinkle Corrector)* Case # 4250 (November, 2004)

³³ NAD acknowledged that some of the advertiser's claims are expressly limited to carpet-cleaning (such as the claim that "*The self-propelled WindTunnel™ by Hoover cleans carpet 56% better than Dyson.*") The instant recommendation, of course, does not apply to these claims in which the advertiser already limits its claims to carpeted surfaces only.

³⁴ NAD was not persuaded, however, by the challenger's argument that the advertiser improperly fails to disclose the types of carpeting on which the vacuum cleaners were tested. NAD noted that ASTM F608 is based upon ongoing field tests in American homes, and that the types of carpeting called for by the standard were chosen because they are representative of real-world homes. Moreover, NAD was confident that consumers understand that no testing standard could conceivably test vacuum cleaners on *all* types of carpeting that may be found in homes. Therefore, NAD concluded that the advertiser is under no obligation to inform consumers as to which types of carpeting were used in the tests.

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decreases as its belt wears; and (iii) testing purportedly showing that the WindTunnel's performance decreases as its bristles wear.

NAD addressed these concerns in turn. NAD first considered the challenger's testing purporting to show that pick-up efficiency of the WindTunnel declines as dust enters the vacuum. The challenger argued that as the WindTunnel's paper filter becomes coated with dust, less air is able to pass through the filter, causing a reduction in suction power. A reduction in suction power, the advertiser added, causes a decline in performance. As support for this argument, the advertiser points to testing results purportedly showing that Hoover vacuum cleaners experience a decline in pick-up efficiency as dust enters the vacuum.

NAD did not find this testing persuasive. First, NAD was troubled by the fact that this testing utilized only two of the four carpeting types (ASTM plush and ASTM "level loop") that are specified by ASTM. The challenger then averaged together the results of these two ASTM carpeting types with the results of testing conducted upon two flooring surfaces specified by the IEC standard, presuming that this average reflected an overall measure of pick-up decline over time.

While NAD values testing performed in accordance with ASTM standards, NAD noted that these testing standards are of limited value when only certain aspects of the standards are adhered to. Thus, NAD concluded that choosing only certain flooring types on which to test pick-up is a significant deviation from ASTM and IEC protocol, and produces results of limited value. Accordingly, NAD concluded that this testing did not overcome the advertiser's reasonable basis for its cleaning superiority claims.

Second, NAD considered the challenger's belt-wear test. NAD was not persuaded that this belt-wear test demonstrated that the WindTunnel declined in performance over time in any meaningful manner. First, NAD was not convinced that a vacuum cleaner's performance after having been used for 300 hours—which the advertiser estimated to approximate 10 years of use—is a consumer-relevant measure of its overall performance. Moreover, NAD noted that no effort was made to determine the effect on cleaning of this purported 15% reduction in power transfer. Perhaps most importantly, NAD took note of the significant limitations of the study that are acknowledged in the study's own conclusion section: "In applying this data to machines in the marketplace one must consider that the loading this belt has been subjected to is quite different to that which would be expected in a home environment. This belt has been run on a push-pull rig for the majority of its life whereas in a home the belt would be subject to many more stops and starts and generally a more varied load. This is sure to affect the rate at which the performance decays. It is also worth noting that this is a very limited sample with only one belt in each condition tested, for these reasons the performance figures may not necessarily be representative of all similar belts." Given the self-acknowledged significant limitations of the test, together with the above-mentioned concerns, NAD concluded that the bristle-wear test failed to demonstrate that the advertiser's WindTunnel vacuums decrease in performance by any meaningful measure.

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NAD next turned to the challenger's bristle wear test. In this test, the challenger's technicians operated a WindTunnel in a continuous pattern in an automated reciprocator for 200 hours, measuring the embedded dirt removal capability per ASTM F608 every 50 hours and compared it to a Dyson DC07 undergoing the same test. Here again, NAD was not persuaded that the bristle-wear testing demonstrated that the WindTunnel declines in performance by any meaningful measure. First, as noted by the advertiser, this test reveals that reduction in bristle penetration is not correlated to reduction in pick-up. Specifically, at 50 hours, when a reduction in penetration of 2.5 mm for the WindTunnel was measured, the pick-up was reduced by 7.5 g, but after 100 hours, when the bristle penetration was reduced an additional 1.2 mm, the pick-up increased by 8.1 (the highest value during this test.) Moreover, NAD noted the acknowledgement in the test report that: "The carpet used in the life test part of this project was a short pile nylon, which is known to be relatively tough. This type of carpet is popular with UK consumers... In the event that the machine does not spend its entire life on such carpet, the bristle wear and pick up reduction values quoted in this report represent a worst case. USA carpets are likely to be a longer pile resulting in less bristle wear." Given the use of carpeting that is not representative of typical carpeting found in the US, NAD concluded that the test is of limited value.

(iv) The Argument that the Advertiser's Own ASTM F608 Testing Undermines its "56%" Claim

The challenger argued that the advertiser's own test results undermine its claim that the Hoover Self-Propelled WindTunnel outcleans Dyson DC07 vacuum by 56%. The challenger noted that the advertiser submitted two sets of testing: one conducted on unclogged Self-Propelled WindTunnel machines, the other comparing clogged Self-Propelled WindTunnels with unclogged Dyson machines. The challenger argued that while the first set of testing indeed demonstrated that the Hoover Self-Propelled WindTunnel outcleans Dyson DC07 vacuum by 56%, the second set of testing showed that a "clogged" Hoover Self-Propelled WindTunnel only outcleans the Dyson DC07 by 39%.

NAD was not persuaded by the challenger's argument. NAD noted that the second test compared Dyson vacuum cleaners *with empty dirt cups* to Hoover WindTunnels *with full bags or dirt cups*. Thus, this testing was compared the Hoover machines at their least effective against Dyson machines at their top performance. (Even testing the respective vacuum cleaners under such disparate circumstances, the Hoover still outperformed the Dyson machines by a significant margin.) NAD determined that a test which subjected the competing units to such disparate circumstances was not sufficient to negate the 56% advantage established by the advertiser's first set of ASTM testing.

B) The Challenger's Argument that Hoover vacuums are designed "at the expense of consumers' carpets"

In addition to criticizing the advertiser's ASTM F608 testing, the advertiser argued that Hoover vacuum cleaners are designed "at the expense of consumers' carpets." The advertiser maintained that Hoover vacuums have stiffer bristle bars which beat carpeting harder than Dyson vacuum

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cleaners—thereby tearing three times as many fibers out of carpet as compared with the Dyson DC07 vacuum cleaner.

At issue in this proceeding is the truth and accuracy of advertising claims made by Hoover. Outside of its findings relating to the claims here at issue, it is not in NAD's purview to make determinations as to extraneous advantages or disadvantages of Hoover machines. NAD concluded that this testing did not overcome the advertiser's reasonable basis for its cleaning superiority claims.

C) The Challenger's IEC Testing

Once a claim is determined to have a reasonable basis, the burden shifts to the challenger to show either that the advertiser's evidence is fatally flawed or that it possesses more reliable evidence reaching a different result.³⁵ Having determined that the advertiser has provided a reasonable basis for its cleaning superiority claims (as modified by the above recommendation), NAD next considered whether this evidence is "fatally flawed," or whether the challenger's evidence qualifies as "more reliable."

The challenger submitted testing that was based upon both ASTM F608 and IEC 60312 ("Vacuum cleaners for household use—Methods of measuring the performance") to show that Dyson, in fact, performs *better* than Hoover.³⁶ The challenger tested several of its own Dyson vacuums against several WindTunnels along with a number of other upright vacuum cleaner models. Specifically, the challenger performed two types of tests: (i) ASTM tests conducted only on plush and "level loop" carpeting, and (ii) IEC tests conducted on hard-wood floors w/ crevices and on Wilton carpet.³⁷

With respect to the results of the ASTM tests, the challenger argued that while its DC07 model (which is featured in various Hoover advertisements) does not perform as well as the premiere WindTunnel model on plush carpet, it performs "much better" on the level loop carpet. These test results further showed that the challenger's DC14 model also performed better on level-loop carpet than on plush carpet.

With respect to the IEC tests, the challenger noted that its DC07 was shown to outperform all competitors (including the WindTunnel) on hard wood floors, and that it offers performance comparable to the WindTunnel on Wilton carpeting. The challenger noted that when the IEC results are combined, the DC07's pick-up results are vastly superior to the WindTunnel's—82% vs 51%. The challenger further argued that when results from ASTM and IEC are combined (to represent actual consumer use), the Dyson outperforms the WindTunnel. The DC14 has an average 77.9% pick-up efficacy, the DC07 has an average 70.9% pick-up; the WindTunnel has an average pick-up efficacy of only 66.3%.

³⁵ *Johns Manville (Formaldehyde-Free Insulation) Case # 4395* (October, 2005)

³⁶ The challenger noted that ASTM measures cleaning efficacy (F608) and suction power (F558) using two separate ASTM standards, but that the IEC standard addresses both cleaning efficacy and suction power in a single standard (60312).

³⁷ The challenger submitted more exhaustive IEC testing in its second submission to NAD.

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Once again, the question for NAD is whether the challenger's evidence is "more reliable" than the advertiser's ASTM F608 testing. As a preliminary matter, NAD was troubled by the challenger's deviation from the standards set forth by both ASTM and IEC. First, as noted by the advertiser, the challenger only conducted ASTM F608-based tests on two of the four carpets specified by ASTM F655. NAD noted that ASTM specified four carpet types for a reason: because they were deemed representative of the array of carpeting seen in actual American homes. Failure to test its vacuum cleaner on half the required carpet types rendered the test of highly limited value.

Nor was NAD persuaded that the challenger's IEC testing is "more reliable" than the advertiser's ASTM testing. As discussed above, NAD noted that the ASTM standard—unlike IEC 60312—is based upon and represents real-life conditions found in American homes. NAD also determined that the advertiser's attempt to piece together portions of results from different test methodologies was not a meaningful exercise.

NAD was further troubled by the excessive variability in the challenger's testing. As noted by the advertiser, the challenger's testing took place over a five-year period and utilized different carpets for different vacuum cleaners, as well as different technicians. Accordingly, NAD found that the challenger's testing was of limited value in terms of head-to-head comparisons.

Accordingly, NAD was not persuaded that the challenger's evidence was "more reliable" than the advertiser's ASTM F608 testing. NAD therefore determined that the advertiser's ASTM testing provided a reasonable basis for its WindTunnel and Fusion cleaning superiority claims—provided that the advertiser modifies its superiority claims, as discussed above, to clearly and conspicuously disclose that its cleaning superiority claims are limited to cleaning carpeting.

V. The Claim that Fusion Offers "NO LOSS OF SUCTION"

The challenger contended that the advertiser's claim that its Fusion cleaner offers "NO LOSS OF SUCTION" is false because the design of the Hoover vacuum which permits dirt and dust to clog the pores of the filter. Dyson maintained that suction is reduced with repeated use. In support of its argument, Dyson submitted data indicating that there is a decline in suction as the bin fills with dust.³⁸ The advertiser, on the other hand, maintained that the claim is truthful because it is properly qualified through the use of the following disclosure: "Suction stays constant after picking up 10 ounces of dirt, as tested by an independent laboratory using ASTM F558 test method and a dirt composition composed of 70% mineral dust and 10% fibrous material." The challenger objected to the appropriateness of the disclosure arguing that the results of a narrow ASTM test do not support the advertiser's broad claims and, moreover, does not measure a vacuum's performance over time.

The claim "No loss of suction" is a broad claim that reasonably communicates to consumers a performance attribute that occurs over time and with repeated use of their vacuum cleaners.

³⁸ Suction was examined by measuring air flow and Air Watts.

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Accordingly, NAD was concerned as to whether the disclosure was adequate to qualify the claim.³⁹ It is not unusual for a performance claim to be qualified with language indicating that the claim is based on laboratory testing or that the touted measure of performance occurs only under some limited set of conditions. While such qualifying language may, in some circumstances, be perfectly appropriate, NAD must assess the correlation between the test conditions and the real world experience of consumers to ensure that the performance claim is meaningful and not misleading to consumers.⁴⁰

The support for the claim "No Loss of suction" consisted of a laboratory test, based on ASTM F558, which purportedly demonstrated that the suction power of the Fusion model remained constant in certain laboratory conditions. NAD was not persuaded that there was sufficient correlation between the laboratory testing and consumer experience in the real world to support a "No Loss of Suction Claim." NAD noted that limitations of the test to support claims for consumer use are addressed in the test itself. Section 4.1 of the Test, under the heading "Significance and Use," provides as follows:

The test results allow the comparison of the maximum potential air power available for cleaning tasks when tested under the conditions of this method. The test results do not indicate the actual air power present during the cleaning process due to the effects of the various tools in use and surfaces being cleaned.⁴¹

NAD also noted that although the test was based on an industry test standard, ASTM F558, the test method conducted by the advertiser, the standard does not provide for measuring the suction of a cleaner in a dust-loaded condition. NAD appreciates that the advertiser sought to measure suction in a cleaner that was not in a new condition but was not persuaded that the protocol utilized by the advertiser, which involved dust loading the machine with 10 ounces of dirt composed of 70% mineral dust and 10% fibrous material, was representative of real world experience of consumers or a representative measure of how vacuum cleaners perform over time. NAD therefore determined that the claim "No Loss of Suction" was not adequately substantiated and recommended that the claim be discontinued.

VI. The Remaining Claims

³⁹ The qualifying language appeared as follows: "Suction stays constant after picking up 10 ounces of dirt, as tested by an independent laboratory using ASTM F558 test method and a dirt composition composed of 70% mineral dust and 10% fibrous material." On the product packaging, the qualifying language appeared in a disclosure on a separate panel.

⁴⁰ The Valvoline Company (Zerex G-05 Extended Life Antifreeze), Report #4375, *NAD Case Reports* (September 2005); Dow Chemical Company (Styrofoam Brand Insulation), Case # 4383, *NAD Case Reports* (August 2005); EuroPro-Corporation (Shark Bagless Stick Vacuum Cleaner), Case # 4216, *NAD Case Reports* (August 2004); Bausch & Lomb Incorporated (Renu), Case #4385, *NAD Case Reports* (August 2005).

⁴¹ ASTM F558-03. In contrast, NAD observed that the test methodology for ASTM 608, which evaluates the dirt removal effectiveness of vacuum cleaners, specifically provides for a correlation with real world use by consumers:

This test method provides an indication of the capability of the vacuum cleaner to remove embedded dirt from carpeting. This test method is based upon results of home cleaning tests so that, in most cases, a reasonable correlation exists between home and laboratory results. (Section 4.1).

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A. Dirt Disposal Claims

The challenger also challenged the advertiser's description of its filter cleaning procedure for the WindTunnel vacuum as "no-touch" filter cleaning false, because in order to clean the paper filter, consumers must remove the filter by hand and spin it against an attached piece of plastic to remove the dust and dirt. The challenger also objected to the claim "No Mess" and "hygienic dirt disposal" because, argued the challenger, in order to empty the advertiser's vacuums' dirt cups, consumers must open the dirt cups and empty the loose dirt and dust into a garbage can, a process that may result in dirt flying into the hands and face of the consumer.

As set forth by the advertiser, the Self Propelled WindTunnel Bagless Upright employs a two-chamber dirt cup with a lid. The lid has a small knob to allow the consumer to rotate the filter prior to opening the lid. In the course of typical cleaning, a consumer turns the knob prior to opening the lid, causing the filter still inside the dirt cup to rotate against a piece of plastic that causes the dust and dirt to fall off the filter and into the container. The consumer may then open the lid with her thumb while holding the cup's handle and pour out the dust and debris.

NAD acknowledged that to ensure a thorough cleaning, a consumer may periodically need to remove the filter and tap it against a dustbin. Nevertheless, because the ordinary cleaning procedure does not require the consumer to come in contact with the filter, NAD determined that the advertiser established a reasonable basis for its use of the claim "no touch" filter cleaning. Similarly, NAD determined that the advertiser provided a reasonable basis for its claims "No Mess" and "hygienic dirt disposal." NAD appreciates that there remains a potential for messiness in cleaning a filter and emptying a dust bin and that the claim might not be supported in comparative context. NAD determined however, that the advertiser's dirt disposal claims, in a monadic context, were adequately supported.

B. HEPA filter/allergen claims

Dyson challenged the advertiser's claims of total allergen filtration, including the advertising claim "Allergen Filtration traps 100% of dust mites, ragweed and common grass pollens," and the claim packaging claim "Allergen Filtration traps 100% dust mites, 99.98% ragweed and common grass pollens." Although the advertiser stated that its Self Propelled WindTunnel bagless utilizes a cartridge filter that is certified to meet the HEPA criteria of 99.97% efficient at 0.3 microns⁴², the claims are misleading, according to the challenger, because there is a significant difference between making a claim for a filter and for a vacuum cleaner as whole.

Although the advertiser established that the advertiser utilizes a cartridge filter that is certified to meet the HEPA criteria of 99.7% efficient at .3 microns, NAD determined that the advertiser's

⁴² According to the advertiser, common pollen is generally between 15 and 25 microns. Dust mites are generally between 250 and 300 microns and even the dust mite allergens referred to by Dyson are generally between 10 and 20 microns. All of these allergens, the challenger noted, are significantly larger than 0.3 microns. Thus, the advertiser maintained, the HEPA filter on the Hoover will trap 100% of these allergens

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claims of total allergen filtration were broader than could be supported by the evidence. NAD agreed with the challenger's contention that the filter capability is not the sole measure of a vacuum cleaner's ability to trap allergens and that the vacuum's sealing system and efficiency of its filter system may strongly influence a vacuum's capacity for trapping allergens and consequently, potential health benefits. Evidence submitted by the challenger indicated that the Hoover cleaners emit a significant quantity of dust, a result which may limit the ability of a HEPA filter to trap or remove allergens. Accordingly NAD recommended that the advertiser discontinue its allergen claims or alternatively, modify the claims to clearly indicate that they are claims limited to the component filter and not for the vacuum cleaner unit as a whole.

C. Twin Chamber Bagless System Helps Maintain Maximum Performance

The challenger argued that the claim "Twin Chamber Bagless System helps maintain maximum cleaning power," which appears in the Sears brochure for the WindTunnel, implies that the WindTunnel does not lose suction. The challenger previously noted that WindTunnel was shown to lose significant suction power when tested in accordance with the IEC dust-loaded test. The advertiser maintained however, that the statement "Twin Chamber Bagless System helps maintain maximum cleaning power" does not imply that the WindTunnel does not ever lose suction. Suction power, argued the advertiser, is only one element of the cleaning performance of a vacuum cleaner. NAD agreed and determined that the claim "helps maintain maximum performance" does not communicate to the reasonable consumer that the vacuum never loses suction. Accordingly, NAD determined that the advertiser provided a reasonable basis for the claim.

D. Cyclone Logo

The challenger also contended that the advertiser's use of cyclone logo, appearing in conjunction with cleaning performance claims for WindTunnel technology, gives rise to the impression that the cleaner uses "cyclone technology." Dyson argued that unlike its own cyclone filtration technology, the advertiser's WindTunnel technology has absolutely nothing to do with the vacuum's method of filtration and contributes little to the cleaning performance of the unit. NAD considered the advertiser's cleaning performance claim in Section IV of this decision and notes here that there was no evidence that the use of the cyclone logo conveys or contributes to any misimpression about the performance of the WindTunnel. Consequently, NAD found the advertiser had a reasonable basis for the use of the logo in its advertising.

CONCLUSION:

NAD concluded that the advertiser provided a reasonable basis for its cleaning superiority claims, provided that the advertiser clearly and conspicuously limit these claims to the vacuum cleaner's performance on carpeting. NAD also concluded that the challenged television commercial did not falsely disparage the Dyson vacuum, but that a certain hangtag advertisement conveyed the impression that Dyson was an ineffective vacuum cleaner. NAD therefore recommended that that advertisement be discontinued. NAD further determined that the claim

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that the Fusion cleaner offers "No Loss of Suction" was not adequately supported by the evidence and NAD recommended that it be discontinued.

ADVERTISER'S STATEMENT:

Maytag Corporation ("Maytag") is pleased that NAD acknowledged that ASTM F608 is the only recognized industry standard test representing real life conditions found in American homes and agreed that the ASTM F608 testing submitted by Maytag provided a reasonable basis for its Hoover WindTunnel™ and Hoover Fusion™ cleaning superiority claims. Maytag believes that consumers understand that cleaning superiority claims for upright vacuum cleaners apply to cleaning of carpeted surfaces in the context of the Maytag advertising. Notwithstanding, Maytag agrees to clarify its cleaning superiority claims (where necessary) to communicate that the claims apply only to cleaning of carpeted surfaces.

Maytag is also pleased that NAD agreed that the challenged television commercial conveyed a message of comparative superiority (which was substantiated by Maytag's F608 testing) and did not falsely disparage Dyson vacuum cleaners.

Maytag is also pleased that NAD determined that the "no touch filter" and other dirt disposal claims were adequately supported; that Maytag provided a reasonable basis for the claim that the WindTunnel's "Twin Chamber Bagless System helps maintain maximum cleaning power"; and that Maytag's use of the WindTunnel logo is not misleading.

Maytag agrees to address NAD's concerns regarding other claims at issue in the challenge in future advertising.

Maytag supports NAD and the self regulatory approach of the industry and appreciates the opportunity to participate in the process. (#4467 JF, closed 04/05/2006)

EXHIBIT I

manatt
manatt | phelps | phillips

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May 10, 2006

Client-Matter: 27699-030

BY HAND

Jennifer Fried, Esq.
National Advertising Division
Council of Better Business Bureaus, Inc.
70 West 36th Street
New York, NY 10018

Re: Advertising for WindTunnel and Fusion Upright Vacuum Cleaners

Dear Ms. Fried:

On behalf of Dyson, Inc. ("Dyson"), this constitutes a compliance challenge regarding the failure of Maytag Corporation ("Maytag") to comply with NAD Case Report #4467 (April 2006) regarding advertising for its WindTunnel and Fusion Upright Vacuum Cleaners. Dyson was the challenger in that proceeding.

In its decision, NAD recommended that Maytag's superior cleaning claims for the WindTunnel be modified "to clearly and conspicuously disclose that its cleaning superiority claims are limited to carpet cleaning." NAD also found that Maytag's "no loss of suction" claim for the Fusion was not adequately substantiated and recommended that it be discontinued. Finally, NAD recommended that Maytag "discontinue its allergen claims or alternatively, modify the claims to clearly indicate that they are claims limited to the component filter and not for the vacuum cleaner as a whole." Contrary to Maytag's assurances to NAD in its Advertiser's Statement, Maytag has not made NAD's recommended modifications to its Web site located at www.hoover.com (the "Site").

Enclosed as Exhibit 1 are copies of pages from the Site that make the following claims for the WindTunnel:

- "The Hoover® Self propelled WindTunnel™ picks up 56% more dirt than Dyson."
- "With its advanced technology and power, the Self-Propelled WindTunnel™ bagless picks up more dirt than any other upright on the market."
- "Allergen filtration – traps 100% dust mites and their eggs and 99.98% of ragweed and common grass pollens."¹

¹ Maytag continues to make this and similar broad allergen filtration claims for other products on the Site, such as the Tempo Widepath, the Bagged Tempo Widepath, the Bagless Tempo Widepath, and the Fold Away Widepath. Copies of these Web pages are enclosed as Exhibit 4.

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manatt | phelps | phillips

Jennifer Fried, Esq.
May 10, 2006
Page 2

Enclosed as Exhibit 2 is a copy of Maytag's brochure for the WindTunnel, which is available on the Site, that makes the following claim for the Wind Tunnel:

- "The Hoover® Self propelled WindTunnel™ picks up 56% more dirt than Dyson."

Enclosed as Exhibit 3 is a copy of a page from the Site that makes the following claim for the Fusion:

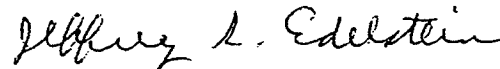
- "Cyclonic technology offers powerful cleaning with no loss of suction."

Section 4.1(B) of the *NAD/NARB Procedures* requires that an advertiser, "after a reasonable amount of time, [make] a bona fide attempt to bring its advertising into compliance with NAD's recommendations." As the above claims illustrate, Maytag has not brought its advertising into compliance with NAD's recommendations. It is also our understanding that other advertising materials and product packaging that make these claims continue to be disseminated. Maytag's failure to comply with NAD's recommendations is especially egregious considering that Web sites can easily be revised in a matter of hours.

We request that NAD conduct a compliance investigation pursuant to Section 4.1 of the *NAD/NARB Procedures*. Maytag should be asked to submit copies of all advertising, packaging, and promotional materials for the WindTunnel and Fusion Upright vacuum cleaners in order for NAD to determine whether the same or similar claims are also still being made on the Site and in other media. In accordance with that Section, if NAD determines that Maytag has not brought its advertising for the WindTunnel and Fusion vacuum cleaners into compliance with NAD's recommendations and its representations in its Advertiser's Statement, NAD should (a) refer this matter to the appropriate government agency and (b) release information about the referral to the press, the public, and to the media in which the advertising has appeared, and report the referral in the next issue of NAD Case Reports.

Thank you for your prompt attention to this matter.

Sincerely,



Jeffrey S. Edelstein

JSE:lms
Enclosures
cc: Shai Halivni, Esq.

80363294.3

EXHIBIT 1

The Hoover Company



Time for Hoover™

A HISTORY OF INNOVATION

This is the very first Hoover, the Model D invented in 1907 by Murray Spangler, who was a janitor in a local department store.

LEARN MORE

FIND PARTS FOR YOUR HOOVER

Model number:

Part number:

SUBMIT

NEED SOME HELP?

Looking for a manual or instructions on how to replace your belt? Find the answer to these questions and many more.

GET HELP



INTRODUCING THE WORLD'S FIRST
SPORT UTILITY VACUUM™

Product Registration

Hoover Self Propelled WindTunnel™ Upright

The Hoover® Self Propelled WindTunnel™ pickups up 56% more dirt than Dyson.

These results are based on ASTM International Test F608, the only recognized test representing real-life conditions found in American homes.

Find out more!



Hoover Self Propelled WindTunnel™ Ultra Upright

Rated #1 by a leading consumer magazine.

Self-Propelled in Forward and Reverse directions. Dirt stays in the Filtrite™ HEPA Filter bag - part of the highly efficient Filtrite™ Filtration System from 3M.

Find out more!



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<http://www.hoover.com/db/hvrHome.asp>

5/10/2006

Hoover® Self Propelled WindTunnel™ Bagless Vacuum

Powerful

Want to be assured that your carpet is truly clean? With its advanced technology and power, the Self-Propelled WindTunnel™ Bagless picks up more dirt than any other upright on the market.



1 12-Amp Motor

Powerful Hoover®-Designed 12-AMP motors are combined with patented Hoover® Cleaning technologies to provide superior cleaning performance.

2 Patented WindTunnel™ Technology

Patented WindTunnel™ Technology uses computer designed air ducts to provide a powerful dual air stream, increasing the amount of dirt you can remove from your carpeting. *more...*

3 Embedded Dirt FINDER™ System

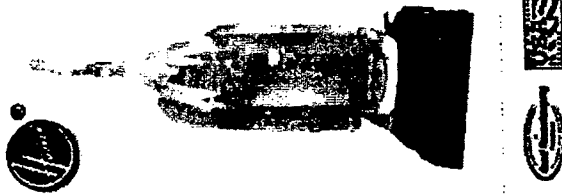
The Embedded Dirt FINDER™ (EDF) helps you find the dirt you cannot see. *more...*

4 Dual Brush Cleaning

The dual brush agitator with brush edge cleaning whisks dust, dirt and lint into the air stream.

5 Cleaning Performance

Hoover Cleaning Performance™ = 31.0. This rating measures the true cleaning performance built into all Hoover® uprights.



Bagged WindTunnel™



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UPRIGHTS » DEEP CLEANERS » HARD FLOOR CLEANERS » CANISTERS » SPECIALTY » CENTRAL VAC. » COMMERCIAL » CLEANING SOLUTIONS »

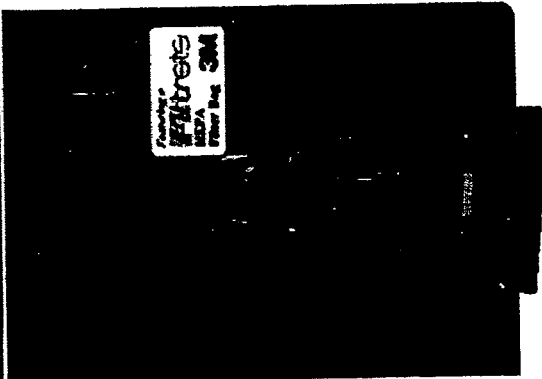
BAGGED FILTRATION UPRIGHTS:

- » Bagged Tempo™ Widepath™
- » Bagged WindTunnel™
- » Self Propelled WindTunnel™ Ultra Upright

U6439900
U6454900

Tempo™ Widepath™

PREV NEXT



Model number: U5468900

Bagged WindTunnel™

- Embedded DirtFinder™ Display alerts the user to areas of the carpet that may need more cleaning attention
- 12 amp motor provides powerful cleaning performance
- Patented Wind Tunnel® Technology that produces excellent cleaning effectiveness
- Exclusive covered up-front tool storage places the tools within easy reach
- Removable, washable final filter
- Edge groomers to remove dirt from carpet near baseboards and furniture
- 15" cleaning width helps get the job done
- Dual brush agitator
- Tool set included: attached hose, 2 extension wands, dusting brush, upholstery nozzle, and crevice tool
- 31 ft. cord for large area vacuuming
- Allergen filtration - traps 100% dust mites and their eggs and 99.98% of ragweed and common grass pollens
- Expected retail range: \$129.99 - \$149.99

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USER GUIDE

QUICKSTART

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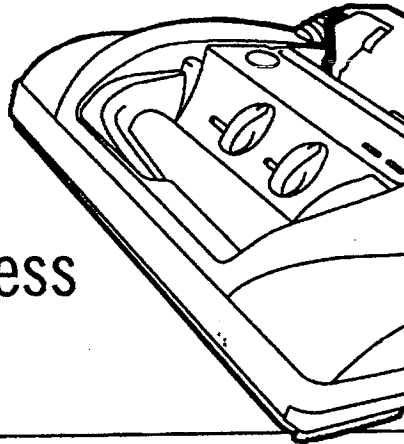


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EXHIBIT 2



Self Propelled WindTunnel™ Bagless Upright Vacuum

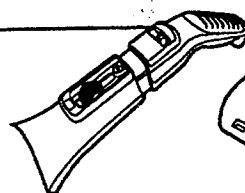
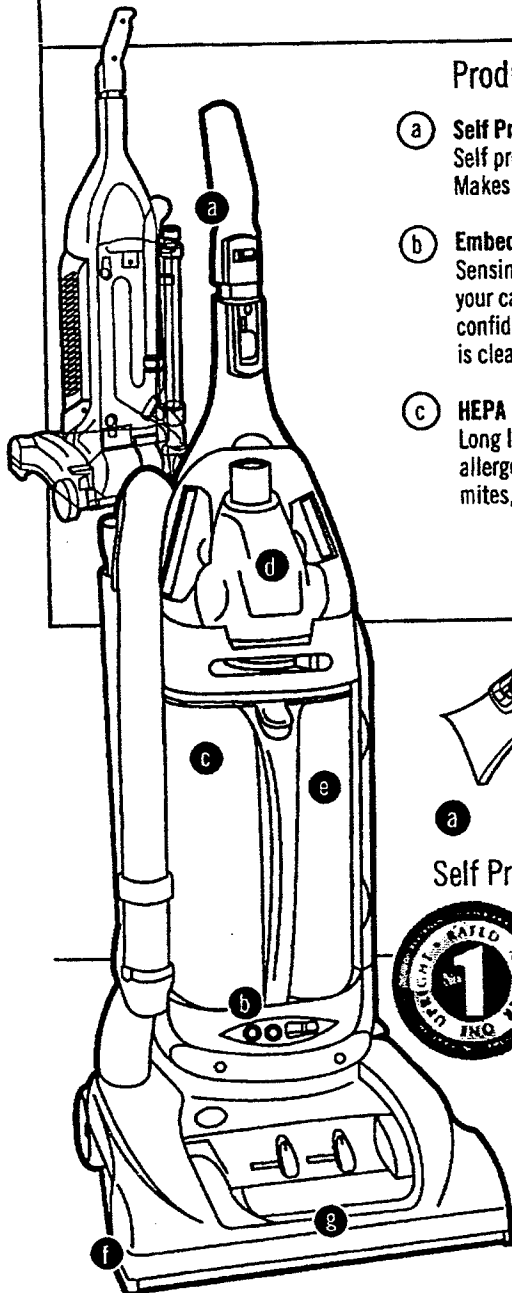


The Hoover Self Propelled WindTunnel picks up 56% more dirt than Dyson.

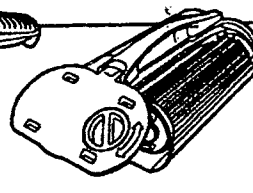
These results are based on ASTM International Test, F608, the only recognized test representing real-life conditions found in American homes.

Product Features:

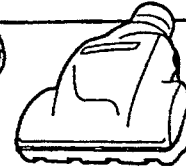
- (a) **Self Propelled**
Self propelled in forward and reverse. Makes cleaning nearly effortless.
- (b) **Embedded Dirt Finder™**
Sensing technology that tells you when your carpet is clean - gives you the confidence to know your job is done. Carpet is clean when light turns green!™
- (c) **HEPA Filter with Allergen Filtration**
Long lasting 3-year HEPA filter with allergen filtration traps 100% of dust mites, ragweed and common grass pollen.
- (d) **Pet Hair Cleaning Tool**
Powerful WindTunnel Technology and rotating brushes easily remove pet hair and dirt from stairs and upholstery.
- (e) **Twin Chamber™ Bagless System**
Helps maintain maximum performance. No need to buy bags.
- (f) **Edge Groomers**
Dual edge groomers provide edge to edge cleaning.
- (g) **Brush Roll Stop**
Brush automatically stops when using tools. Manual brush shut-off for hard floor cleaning.



(a) Self Propelled



(e) Twin Chamber™ Bagless System



(d) Pet Hair Cleaning Tool



(c) HEPA Filter with Allergen Filtration



Patented WindTunnel™ Technology

Patented WindTunnel™ Technology uses computer designed dual air ducts and a vertical air pattern that direct the airflow along the front and rear of the agitator cavity and across the full width of the nozzle. They not only lift the dirt but trap it so it won't fall back into your carpet.

EXHIBIT 3

Fusion™ Cyclonic Bagless Upright



UPRIGHTS

DEEP CLEANERS

HARD FLOOR CLEANERS

CANISTERS

SPECIALTY

CENTRAL VAC.

COMMERCIAL

CLEANING SOLUTIONS

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BAGLESS FILTRATION
UPRIGHTS:» Bagless Tempo™
Widepath™U5155900
U5156900» Elite™ Rewind™ Upright
Bagless

» Fold Away™ Widepath™

U5170900
U5172900
U5175900
U5179900» Fusion™ Cyclonic Bagless
Upright

» Hoover EmPower™

U5262910
U5265900
U5268970
U5269900

» Hoover Z™ Bagless Upright

U9125900
U9145900

» Savvy™

U8171900
U8174900
U8181900» Self Propelled WindTunnel™
BaglessU6630900
U6634900» WindTunnel™ Bagless
UprightU5753900
U5760900

PREV

NEXT

Model number: U5180900

Fusion™ Cyclonic
Bagless Upright- Cyclonic technology offers powerful cleaning with
no loss of suction*- Super-powerful cyclonic air movement - spins dirt
and dust away- No filters to replace - permanent washable filters
last the life of your vacuum- Adjustable Handle height - telescoping handle
adjusts to varying heights for convenient use and
storage- 32' Cleaning Reach - with a 24' power cord and a 8'
stretch hose, you can vacuum several rooms
without having to reposition the power plug- On-board tool set included - everything you need to
reach every corner of the house - including a pet
hair cleaning tool, two 14" extension wands, crevice
tool and dusting brush for delicate surfaces- Powered hand tool - brings power right to the spot
you're cleaning - like stairs and upholstery

- E-Z Access™ Belt Change

- No filters to replace - no need to buy or replace
filters, ever. Simply remove, clean and use again- Extension wands - two extension wands provide
more than 10' of reach with the stretch hose for
cleaning ceiling corners and around high windows- 15" Widepath™ Nozzle - one of the widest cleaning
paths available, so you'll finish the job faster

- Available exclusively at Wal-Mart

- *Suction stays constant for up to 10 ounces of dirt,
as tested by an independent laboratory using
ASTMF558 test method and a dirt composition
comprised of 70% mineral dust, 20% cellulose dust
and 10% fibrous material.

COMPARE

PARTS

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• Brochure

Fusion™ Cyclonic Bagless Upright

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EXHIBIT 4

Tempo™ Widepath™

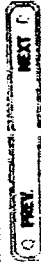


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BAGGED FILTRATION UPRIGHTS:

- » Bagged Tempo™ Widepath™
- » Bagged WindTunnel™
- » Self Propelled WindTunnel™ Ultra Upright
 - U6439900
 - U6454900
- » Tempo™ Widepath™



Model number: U5145900

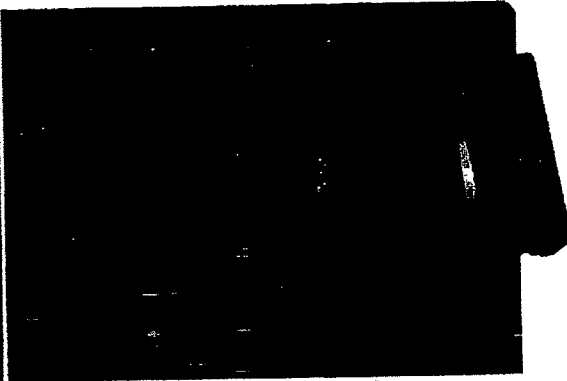
Tempo™ Widepath™

- Allergen filtration traps 100% dust mites, 99.98% ragweed and common grass pollens
- 15' cleaning path - gets the job done quickly
- Powerful 12 amp motor provides powerful cleaning performance
- Filter bag check for optimum cleaner performance
- Brilliant headlight illuminates cleaning path
- On-board tool set places the attachments conveniently within reach
- Expected retail range: \$59.99 - \$79.99

COMPARE

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Bagged Tempo™ Widepath™



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BAGGED FILTRATION UPRIGHTS:

- Bagged Tempo™ Widepath™
- Bagged WindTunnel™
- Self Propelled WindTunnel™ Ultra Upright
- Tempo™ Widepath™

U6439900
U6454900

PREV NEXT

Model number: U5140900

Bagged Tempo™ Widepath™

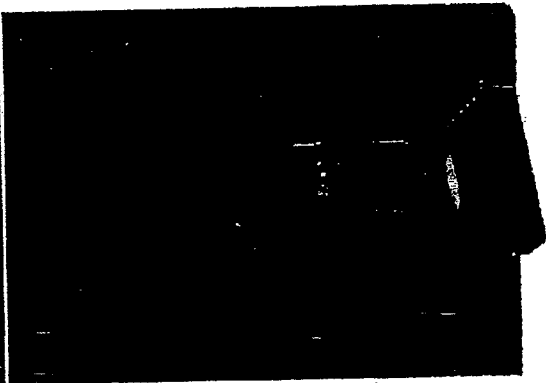
- Allergen filtration - traps 100% dust mites, 99.98% ragweed and common grass pollens
- Powerful 12 amp motor - provides powerful cleaning performance
- Filter bag check for optimum cleaner performance
- 15" cleaner width - gets the job done quickly
- On-board tool set places the attachments conveniently within reach
- Expected retail range: \$59.99 - \$79.99

COMPLETE

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Bagless Tempo™ Widepath™



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BAGLESS FILTRATION UPRIGHTS:

- » Bagless Tempo™ Widepath™
 - U5155900
 - U5156900
- » Elite™ Rewind™ Upright Bagless
- » Fold Away™ Widepath™
 - U5170900
 - U5172900
 - U5175900
 - U5179900
- » Fusion™ Cyclonic Bagless Upright
- » Hoover EmPower™
 - U5262810
 - U5265900
 - U5268970
 - U5269900
- » Hoover Z™ Bagless Upright
 - U9125900
 - U9145900
- » Savvy™
 - U8171900
 - U8174900
 - U8181900
- » Self Propelled WindTunnel™ Bagless
 - U6630900
 - U6634900
- » WindTunnel™ Bagless Upright
 - U5753900
 - U5760900

Model number: U5155900

Bagless Tempo™ Widepath™

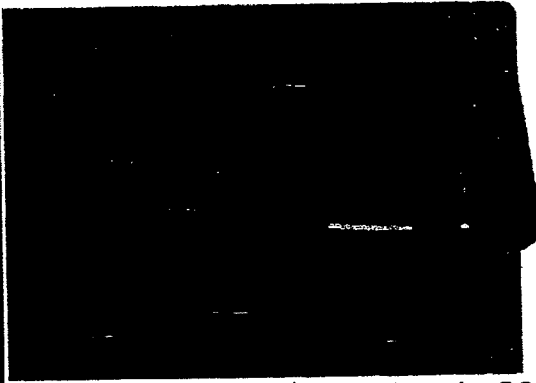
- Easy empty dirt cup - no bags to buy or replace
- Powerful 12 amp motor - provides powerful cleaning performance
- Allergen filtration
- Brilliant headlight illuminates cleaning path
- Wide 15" cleaning path - gets the job done quickly
- On-board tool set places the attachments conveniently within reach
- Expected retail range: \$59.99 - \$79.99

COMPARE

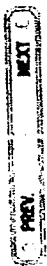
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FAB



Bagless Tempo™ Widepath™



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Fold Away™ Widepath™

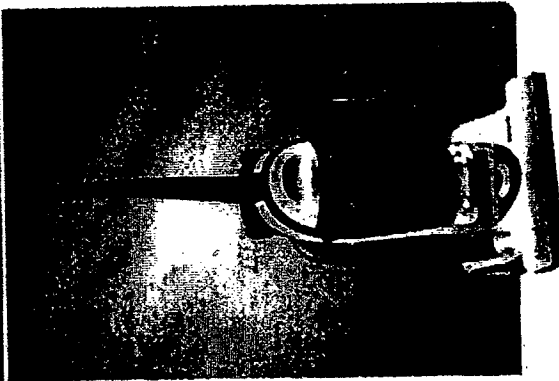


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BAGLESS FILTRATION UPRIGHTS:

- » Bagless Tempo™ Widepath™
 - U5155900
 - U5156900
- » Elite™ Rewind™ Upright Bagless
- » Fold Away™ Widepath™
 - U5170900
 - U5172900
 - U5175900
 - U5179900
- » Fusion™ Cyclonic Bagless Upright
- » Hoover EmPower™
 - U5262910
 - U5265900
 - U5288970
 - U5289900
- » Hoover Z™ Bagless Upright
 - U9125900
 - U9145900
- » Savvy™
 - U8171900
 - U8174900
 - U8181900
- » Self Propelled WindTunnel™ Bagless
 - U6630900
 - U6634900
- » WindTunnel™ Bagless Upright
 - U5753900
 - U5760900



Fold Away™ Widepath™

Model number: U5175900

- Bonus Hand Tool - Perfect for pet hair, stairs and upholstery
- No Assembly Required - Just fold up the handle and it's ready to clean. Handle folds down for easy storage.
- Lightweight - Easy to carry and clean stairs
- Triple-Stretch Hose - Provides extra-long reach
- Bagless - E-Z Empty™™ Dirt Cup - No bags needed
- Allergen Filtration - Traps 100% dust mites, 99.98% ragweed and common grass pollens
- 12 AMP Motor - Powerful but quiet
- 15" Cleaner Width - For fast cleaning
- On-Board Tool Set - places the attachments conveniently within reach
- Full One Year Warranty
- Expected Retail Range: \$79.99 - \$99.99

COMPARE

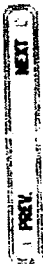
PARTS

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FAQ



Fold Away™ Widepath™



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Jeffrey S. Edelstein
Manatt, Phelps & Phillips, LLP
Direct Dial: (212) 790-4533
E-mail: jedelstein@manatt.com

Client-Matter: 27699-030

May 16, 2006

BY HAND AND E-MAIL

Jennifer Fried, Esq.
National Advertising Division
Council of Better Business Bureaus, Inc.
70 West 36th Street
New York, NY 10018

Re: Advertising for WindTunnel and Fusion Upright Vacuum Cleaners

Dear Ms. Fried:

We are writing as a follow-up to the compliance challenge we submitted on May 10, 2006 on behalf of Dyson, Inc. ("Dyson") about the failure of Maytag Corporation ("Maytag") to comply with NAD Case Report #4467 (April 2006) regarding advertising for its WindTunnel and Fusion Upright Vacuum Cleaners. We appreciate that NAD opened its compliance investigation promptly on May 11, 2006.

After we submitted the letter to you, Maytag made some modifications to the Hoover Web site. However, these modifications do not constitute compliance with the NAD decision.

First, Maytag made a minor modification to the claim on its Web site for the Fusion that "Cyclonic technology offers powerful cleaning with no loss of suction." This claim was modified to state:

Cyclonic technology offers powerful cleaning with no loss of suction*
*Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning
Ability**

***Suction stays constant for up to 10 ounces of dirt using a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material. No testing has established a correlation between suction performance and carpet cleaning ability in the home. Household results may vary.

A copy of the Web page with this revised claim is attached as Exhibit 5.

Maytag modified the claim by adding the disclaimers "Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning Ability" and "No testing has established a correlation between suction performance and carpet cleaning ability in the home. Household results may vary." Maytag also modified the disclaimer "Suction stays constant after picking up 10 ounces of dirt,



Jennifer Fried, Esq.
May 16, 2006
Page 2

as tested by an independent laboratory using ASTM F558 test method and a dirt composition composed of 70% mineral dust and 10% fibrous material." to "Suction stays constant for up to 10 ounces of dirt using a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material."

As discussed in our May 10 letter, NAD found Maytag's "no loss of suction" claim for the Fusion to be unsubstantiated and recommended that it be discontinued. Not only do Maytag's minor revisions not comply with NAD's recommendations, but they represent a disingenuous attempt to comply at best.

Rather than discontinuing the unsubstantiated "no loss of suction" claim, Maytag simply attempted to qualify this false claim with a two-part disclaimer. This is not sufficient. It is well established NAD precedent that disclosures cannot be used to cure a false claim. *See, e.g., Windjammer Barefoot Cruises, Ltd./Bring A Friend – Sail Free Offer*, NAD Case Report # 3734 (Feb. 2001); *Thane International/BioSlim Weight Loss Program*, NAD Case Report #3557 (June 1999).

Moreover, the disclaimer refers to the Fusion's ability to clean carpet and whether there is a correlation between suction performance and carpet cleaning. Such information is totally irrelevant. Although NAD recommended that Maytag limit its unqualified superior cleaning claims for the WindTunnel to carpet, this recommendation did not apply to Maytag's "no loss of suction" claim for the Fusion. NAD clearly recommended that Maytag discontinue this false claim.

Rather than trying to correct its false advertising claim, Maytag's revised disclaimer appears to be a transparent attempt to attack and discredit Dyson's "no loss of suction" claims for its vacuum cleaners. Maytag's disclaimer now states: "No testing has established a correlation between suction performance and carpet cleaning ability in the home. Household results may vary." As NAD knows, Maytag challenged a number of advertising claims, including a "no loss of suction" claim, for Dyson vacuums. These challenges were moved from the NAD forum and are counterclaims in a pending patent infringement lawsuit filed by Dyson.

Second, Maytag deleted the word "allergen" from its filtration claim for the WindTunnel. Maytag changed the claim from "Allergen filtration – traps 100% dust mites and their eggs and 99.8% of ragweed and common grass pollens" (Exhibit 1 to compliance challenge letter) to "Filtration traps 100% dust mites and their eggs and 99.98% of ragweed and common grass



Jennifer Fried, Esq.
May 16, 2006
Page 3

pollens." A copy of the Web page with the revised claim is attached as Exhibit 6.¹ This modification does not comply with the NAD decision.

NAD determined that the claim that the Hoover WindTunnel "traps 100% dust mites, 99.98% ragweed and common grass pollens" was unsubstantiated because "the advertiser's claims of total allergen filtration were broader than could be supported by the evidence. NAD agreed with the challenger's contention that the filter capability is not the sole measure of a vacuum cleaner's ability to trap allergens and that the vacuum's sealing system and efficiency of its filter system may strongly influence a vacuum's capacity for trapping allergens and consequently, potential health benefits." NAD found that "Evidence submitted by the challenger indicated that the Hoover cleaners emit a significant quantity of dust, a result which may limit the ability of a HEPA filter to trap or remove allergens."

Therefore, NAD "recommended that the advertiser discontinue its allergen claims or alternatively, modify the claims to clearly indicate that they are claims limited to the component filter and not for the vacuum cleaner unit as a whole." Simply deleting the word "allergen" does not comply with these recommendations. By stating "Filtration traps 100% dust mites and their eggs and 99.98% of ragweed and common grass pollens," Maytag continues to make claims of total allergen filtration for the vacuum cleaner unit as a whole, contrary to NAD's recommendations.

Maytag has taken six weeks to make any modification to its Web site, even though such changes could be made in a matter of hours. As the above claims clearly illustrate, Maytag has not made a bona fide attempt to discontinue its false claims for the Fusion and the WindTunnel and bring its advertising into compliance with NAD's recommendations. We request that NAD add the revised claims to its compliance investigation pursuant to Section 4.1 of the *NAD/NARB Procedures*. Maytag should be asked to submit copies of all advertising, packaging, and promotional materials for the WindTunnel and Fusion Upright vacuum cleaners in order for NAD to determine whether the same or similar claims are also still being made on the Site and in other media. In accordance with that Section, if NAD determines that Maytag has not brought its advertising for the WindTunnel and Fusion vacuum cleaners into compliance with NAD's recommendations and its representations in its Advertiser's Statement, NAD should (a) refer this matter to the appropriate government agency and (b) release information about the referral to the press, the public, and the media in which the advertising has appeared, and report the referral in the next issue of NAD Case Reports.

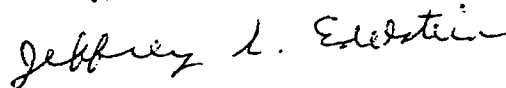
¹ Maytag made the same change to the filtration claims for other products on the Site, such as the Tempo Widepath, the Bagged Tempo Widepath, the Bagless Tempo Widepath, and the Fold Away Widepath. Copies of the revised Web pages are attached as Exhibit 7.

manatt
manatt | phelps | phillips

Jennifer Fried, Esq.
May 16, 2006
Page 4

Thank you for your prompt attention to this matter.

Sincerely,

A handwritten signature in cursive script, reading "Jeffrey S. Edelstein".

Jeffrey S. Edelstein

JSE:lms
Enclosures
cc: Shai Halivni, Esq.

80363800.2

EXHIBIT 5

Fusion™ Cyclonic Bagless Upright

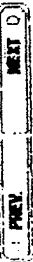


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BAGLESS FILTRATION UPRIGHTS:

- » Bagless Tempo™ Widepath™ U5155900 U5156900
- » Elite™ Rewind™ Upright Bagless U5172900 U5175900 U5179900
- » Fold Away™ Widepath™ U5170900 U5172900 U5175900 U5179900
- » Fusion™ Cyclonic Bagless Upright
- » Hoover EmPower™ U5262910 U5265900 U5268970 U5269900
- » Hoover Z™ Bagless Upright U9125900 U9145900
- » Savvy™ U8171900 U8174900 U8181900
- » Self Propelled WindTunnel™ Bagless U6630900 U6634900
- » WindTunnel™ Bagless Upright U5753900 U5760900



Fusion™ Cyclonic Bagless Upright

Model number: U5180900

- Cyclonic technology offers powerful cleaning with no loss of suction* "Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning Ability"
- Super-powerful cyclonic air movement - spins dirt and dust away
- No filters to replace - permanent washable filters last the life of your vacuum
- Adjustable Handle height - telescoping handle adjusts to varying heights for convenient use and storage
- 32" Cleaning Reach - with a 24' power cord and a 8' stretch hose, you can vacuum several rooms without having to reposition the power plug
- On-board tool set included - everything you need to reach every corner of the house - including a pet hair cleaning tool, two 14" extension wands, crevice tool and dusting brush for delicate surfaces
- Powered hand tool - brings power right to the spot you're cleaning - like stairs and upholstery
- E-Z Access™ Belt Change
- No filters to replace - no need to buy or replace filters, ever. Simply remove, clean and use again
- Extension wands - two extension wands provide more than 10' of reach with the stretch hose for cleaning ceiling corners and around high windows
- 15" Widepath™ Nozzle - one of the widest cleaning paths available, so you'll finish the job faster

*Suction stays constant for up to 10 ounces of dirt using a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material. No testing has established a correlation between suction performance and carpet cleaning ability in the home. Household results may vary.

COMPARE

PARTS

USE & CARE

ADDITIONAL

PDF

Brochure

Fusion™ Cyclonic Bagless Upright

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5/11/2006

<http://www.hoover.com/db/xq/asp.hvrProductMain/CatID.1/SubID.1/ProdID.267/ModID.1959/qx/FusionCyclonicBagless.htm>

EXHIBIT 6

Bagged WindTunnel™



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[HARD FLOOR CLEANERS](#)
[CANISTERS](#)
[SPECIALTY](#)
[CENTRAL VAC.](#)
[COMMERCIAL](#)
[CLEANING SOLUTIONS](#)

BAGGED FILTRATION UPRIGHTS:

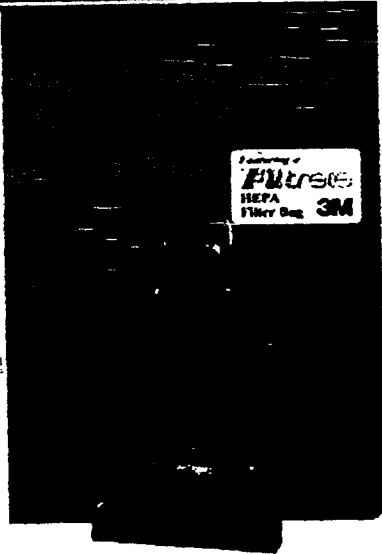
- » Bagged Tempo™ Widepath™
- » Bagged WindTunnel™
- » Self Propelled WindTunnel™ Ultra Upright

U6439900
U6454900

- » Tempo™ Widepath™

PREV.

NEXT



Model number: U5468900

Bagged WindTunnel™

- Embedded DirtFinder™ Display alerts the user to areas of the carpet that may need more cleaning attention
- 12 amp motor provides powerful cleaning performance
- Patented Wind Tunnel® Technology that produces excellent cleaning effectiveness
- Exclusive covered up-front tool storage places the tools within easy reach
- Removable, washable final filter
- Edge groomers to remove dirt from carpet near baseboards and furniture
- 15" cleaning width helps get the job done
- Dual brush agitator
- Tool set included: attached hose, 2 extension wands, dusting brush, upholstery nozzle, and crevice tool
- 31 ft. cord for large area vacuuming
- Filtration traps 100% dust mites and their eggs and 99.98% of ragweed and common grass pollens
- Expected retail range: \$129.99 - \$149.99

COMPARE

PARTS

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EXHIBIT 7

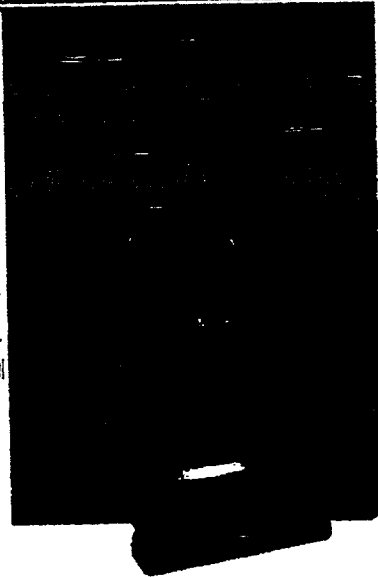
Tempo™ Widepath™

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**BAGGED FILTRATION
UPRIGHTS:**

- » Bagged Tempo™ Widepath™
- » Bagged WindTunnel™
- » Self Propelled WindTunnel™
Ultra Upright
- » Tempo™ Widepath™

 U6439900
U6454900

[PREV.](#)
[NEXT](#)


Model number: U5145900

Tempo™ Widepath™

- Filtration traps 100% dust mites, 99.98% ragweed and common grass pollens
- 15" cleaning path - gets the job done quickly
- Powerful 12 amp motor provides powerful cleaning performance
- Filter bag check for optimum cleaner performance
- Brilliant headlight illuminates cleaning path
- On-board tool set places the attachments conveniently within reach
- Expected retail range: \$59.99 - \$79.99

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Bagless Tempo™ Widepath™

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**BAGLESS FILTRATION
UPRIGHTS:**

 » Bagless Tempo™
Widepath™

 U5155900
U5156900

 » Elite™ Rewind™ Upright
Bagless

 » Fold Away™ Widepath™
U5170900
U5172900
U5175900
U5179900

 » Fusion™ Cyclonic Bagless
Upright

 » Hoover EmPower™
U5262910
U5265900
U5268970
U5269900

 » Hoover Z™ Bagless Upright
U9125900
U9145900

 » Savvy™
U8171900
U8174900
U8181900

 » Self Propelled WindTunnel™
Bagless
U6630900
U6634900

 » WindTunnel™ Bagless
Upright
U5753900
U5760900

[PREV.](#)
[NEXT](#)

Model number: U5155900

**Bagless Tempo™
Widepath™**

- Easy empty dirt cup - no bags to buy or replace
- Powerful 12 amp motor - provides powerful cleaning performance
- Brilliant headlight illuminates cleaning path
- Wide 15" cleaning path - gets the job done quickly
- On-board tool set places the attachments conveniently within reach
- Expected retail range: \$59.99 - \$79.99

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Bagged Tempo™ Widepath™

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**BAGGED FILTRATION
UPRIGHTS:**

» Bagged Tempo™ Widepath™

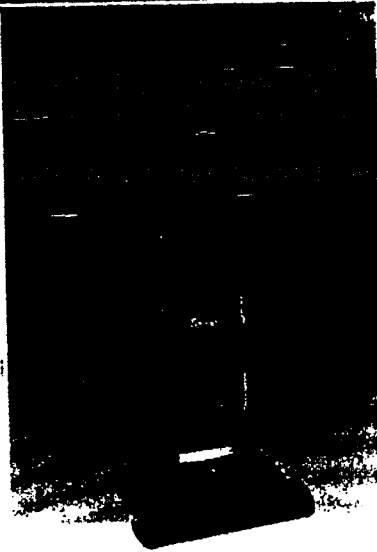
» Bagged WindTunnel™

» Self Propelled WindTunnel™
Ultra Upright

U6439900

U6454900

» Tempo™ Widepath™

[PREV.](#)[NEXT](#)

Model number: U5140900

**Bagged Tempo™
Widepath™**

- Filter traps 100% dust mites, 99.98% ragweed and common grass pollens
- Powerful 12 amp motor - provides powerful cleaning performance
- Filter bag check for optimum cleaner performance
- 15" cleaner width - gets the job done quickly
- On-board tool set places the attachments conveniently within reach
- Expected retail range: \$59.99 - \$79.99

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Fold Away™ Widepath™

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**BAGLESS FILTRATION
UPRIGHTS:**

- » Bagless Tempo™
Widepath™
U5155900
U5156900
- » Elite™ Rewind™ Upright
Bagless
- » Fold Away™ Widepath™
U5170900
U5172900
U5175900
U5179900
- » Fusion™ Cyclonic Bagless
Upright
- » Hoover EmPower™
U5262910
U5265900
U5268970
U5269900
- » Hoover Z™ Bagless Upright
U9125900
U9145900
- » Savvy™
U8171900
U8174900
U8181900
- » Self Propelled WindTunnel™
Bagless
U6630900
U6634900
- » WindTunnel™ Bagless
Upright
U5753900
U5760900

[PREV.](#)[NEXT](#)

Model number: U5170900

**Fold Away™
Widepath™**

- Fully assembled - just lift the fold-down handle and this cleaner is ready to go right out of the box
- Easy empty dirt cup - no bags to buy or replace
- Powerful 12 amp motor - provides powerful cleaning performance
- Filters out 100% of dust mites and 99.98% of ragweed and common grass pollens
- 15" cleaner width - gets the job done faster
- On board tool set places the attachments conveniently within reach
- Expected retail range: \$69.99 - \$89.99

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EXHIBIT J

NATIONAL ADVERTISING DIVISION®

70 West 36th Street, New York, NY 10018



NARC PARTNERS August 8, 2006

VIA FACSIMILE

Stephen P. Durchslag, Esq.
Winston & Strawn, LLP
35 West Wacker Drive
Chicago, IL 60601-9703

Re: Advertising for WindTunnel and Fusion Upright Vacuum Cleaners

Dear Mr. Durchslag:

Attached please find a copy of NAD's report on the compliance matter involving advertising for WindTunnel and Fusion Upright Vacuum Cleaners, which will be published in the next issue of the *NAD Case Reports*. Please note that NAD will refer this matter to the Federal Trade Commission.

We would like to thank you for your participation in this compliance proceeding and your support of the self-regulatory process. If you have any questions, I may be reached at (212) 705-0121.

Sincerely,

David G. Mallen
Assistant Director

cc: Jeffrey S. Edelstein, Esq.

Enclosure

phone: 866.334.6272 • fax: 212.705-0130 • www.nadreview.org

The National Advertising Division of the Council of Better Business Bureaus (CBBB). Policy is established by the National Advertising Review Council (NARC).

Case #4467C (08/02/06)

THE HOOVER COMPANY

WindTunnel and Fusion Upright Vacuum Cleaners

Compliance Proceeding from NAD Case Report #4467JF

Advertising Agency: Undisclosed

Challenger: Dyson, Inc.

Product Type: Household Products

Issues: Comparative Performance Claims

Disposition: Compliance

Basis of Inquiry:

This compliance proceeding stems from a challenge by Dyson, Inc. ("the challenger"), regarding advertising claims made by the Hoover Company, a subsidiary of the Maytag Corporation ("the advertiser"), for its WindTunnel and Fusion Upright Vacuum Cleaners.

The Prior Decision (NAD Case # 4467):

In April of 2006, NAD reviewed numerous advertising claims made by the advertiser for its WindTunnel and Fusion vacuum cleaners including cleaning superiority claims, "no loss of suction" claims, and "allergen filtration" claims.

Following its review of the evidence, NAD concluded that "the advertiser's ASTM testing provided a reasonable basis for its WindTunnel and Fusion cleaning superiority claims—provided that the advertiser modifies its superiority claims... to clearly and conspicuously disclose that its...claims are limited to cleaning carpeting." Regarding the "no loss of suction" claim for Fusion, NAD determined that the claim was not adequately substantiated, and therefore recommended that it be discontinued. Finally, NAD found that "the advertiser's claims of total allergen filtration were broader than could be supported by the evidence," and therefore recommended that the advertiser either discontinue these claims, or modify them "to clearly indicate that they are claims limited to the component filter and not for the vacuum cleaner unit as a whole."

The Compliance Inquiry:

The challenger initiated the present compliance proceeding by noting that the following claims appeared on the advertiser's website:

- (i) "The Hoover® Self propelled WindTunnel™ picks up 56% more dirt than Dyson."¹
- (ii) "With its advanced technology and power, the Self-Propelled WindTunnel™ bagless picks up more dirt than any other upright on the market."
- (iii) "Filtration traps 100% dust mites and their eggs and 99% of ragweed and common grass pollens."²

¹ The challenger noted that this claim appears both on the advertiser's website itself and on a Maytag brochure that is available on the site.

² The challenger noted that the advertiser had modified this claim from its original phrasing, which read: "Allergen filtration—traps 100% dust mites and their eggs and 99% of ragweed and common grass pollens."

THE HOOVER COMPANY
WindTunnel and Fusion Upright Vacuum Cleaners
Page: 2

(iv) "Cyclonic technology offers powerful cleaning with no loss of suction"
* Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning Ability**

***Suction stays constant for up to 10 ounces of dirt using a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material. No testing has established a correlation between suction performance and carpet cleaning ability in the home. Household results may vary.³

The challenger argued that these claims do not comply with NAD's decision. With respect to the advertiser's "no loss of suction" claim in particular, the challenger argued that the advertiser's modification of this claim with a new two-part disclaimer was insufficient. It cited the well-established NAD precedent that disclosures cannot be used to cure a false claim. Moreover, the challenger argued that the content of the disclaimer (which refers to the Fusion's ability to clean carpet and whether there is a correlation between suction performance and carpet cleaning) is irrelevant to NAD's decision on this point.

With respect to the advertiser's "filtration" claim, the challenger emphasized NAD's determination that the filtration claims were unsubstantiated because they were broader than could be supported by the evidence. The challenger noted NAD's finding that "the filter capability is not the sole measure of a vacuum cleaner's ability to trap allergens and that the vacuum's sealing system and efficiency of its filter system may strongly influence a vacuum's capacity for trapping allergens and consequently, potential health benefits." The challenger contended that simply deleting the word "allergen" from its claim as the advertiser has done is not sufficient to comply with NAD's recommendations. It argued that the claim as currently phrased is still a total allergen filtration claim.

Advertiser's Position:

As a preliminary matter, the advertiser noted that the challenger's initial compliance inquiry was dated merely three weeks after the final NAD decision was published. The advertiser argued that three weeks does not constitute a "reasonable amount of time" to bring advertising into compliance with NAD's recommendations.

The advertiser then noted that it is in the process of revising the cleaning superiority claims on its website to clarify that these claims apply to carpet cleaning. Specifically, the advertiser noted that the cleaning superiority claim has been removed from the Self Propelled WindTunnel microsite, and that the claim appearing on the home page is currently being revised—and that the revision should be completed within approximately one week of its response letter.

³ The challenger noted that this claim had been modified from its original formulation, which read: "Cyclonic technology offers powerful cleaning with no loss of suction." The challenger, however, maintained that even as modified, this claim does not comply with NAD's underlying decision.

THE HOOVER COMPANY
WindTunnel and Fusion Upright Vacuum Cleaners
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With respect to the cleaning superiority claim that appears on the Maytag brochure (which is available in PDF format on the advertiser's website), the advertiser noted that the brochure will have to be completely redone to incorporate NAD's recommendations. The advertiser noted that it is currently in the process of revising this brochure, and that in the meantime the link to the brochure has been removed from the website.

The advertiser then addressed its website claim that reads: "Want to be assured your carpet is truly clean? With its advanced technology and power, the Self-Propelled WindTunnel Bagless picks up more dirt than any other upright on the market." It noted that this claim is already limited to carpet cleaning performance, and is thus consistent with NAD's recommendations.

The advertiser also argued that it modified its "allergen filtration" claims and "no loss of suction" claims in accordance with NAD's recommendations. With respect to the "no loss of suction" claims in particular, the advertiser argued that the added disclosure addresses NAD's concerns regarding the applicability of the substantiation to real world conditions. The advertiser further noted that NAD has consistently found that vacuum cleaner suction claims are interpreted by consumers as being cleaning claims, and that its disclosure remedies any such implication.

Decision:

As an initial matter, NAD, following its review of the submissions and advertising claims raised in the compliance inquiry, determined that Maytag has made a reasonable attempt to comply with NAD's decision. NAD first reviewed the advertiser's cleaning superiority claims. NAD appreciated that the advertiser is in the process of revising the cleaning superiority claims on its website to clarify that these claims apply to carpet cleaning. Specifically, NAD was satisfied that the cleaning superiority claim has been removed from the Self Propelled WindTunnel microsite, and that the claim appearing on the home page was similarly revised within a week.

With respect to the cleaning superiority claim that appears on the Maytag brochure, NAD was satisfied that Maytag was carrying out steps to bring this brochure (and the website) into compliance noting that the advertiser had removed the link to the brochure on its website in the interim. NAD then addressed the claim: "Want to be assured your carpet is truly clean? With its advanced technology and power, the Self-Propelled WindTunnel Bagless picks up more dirt than any other upright on the market." NAD agreed with the advertiser that this claim is already limited to carpet cleaning performance, and is thus consistent with NAD's recommendations.

NAD also observed that Maytag further modified its advertising to indicate that its allergen filtration claims are limited to the component part, the HEPA filter rather than the performance of the vacuum as a whole, a step that was consistent with NAD's decision.

NAD remained concerned, however, about the truth and accuracy of advertising for the Fusion vacuum cleaner. With respect to the "No Loss of Suction" claim, NAD noted that the advertiser provided an additional disclosure that states: "**Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning Ability." This additional disclosure does not adequately address the concern raised in NAD's decision. In its decision NAD determined that the "No Loss of Suction" claim

THE HOOVER COMPANY
WindTunnel and Fusion Upright Vacuum Cleaners
Page: 4

is a broad performance claim that reasonably communicates a performance attribute that consumers can expect over time and with repeated use. NAD concluded that the evidence submitted to support the claim, a laboratory test based on ASTM F558, did not correlate with the consumer use of vacuum cleaners. NAD recommended that the claim "No Loss of Suction" be discontinued.

The additional disclosure purports to communicate that there is a distinction between "suction" and "cleaning capability." It does not however, address the concern that the claim communicates a performance benefit - "no loss of suction" - that consumers would reasonably expect to realize based on the advertisement. NAD noted that rather than discontinue the claim, the advertiser sought to qualify it with an additional disclosure that, in essence, contradicts the message conveyed by the claim.

Given the advertiser's failure to comply with NAD's decision, pursuant to Section 4.1 of the NAD/NARB Procedures, NAD will refer this inquiry to the appropriate federal agency for possible law enforcement action. (#4467C DGM, closed 08/02/2006)

EXHIBIT K

Advertising Age

CRAIN'S INTERNATIONAL NEWSPAPER OF MARKETING | U.S. \$3.99, CANADA \$5.00, U.K. £3.95

14 | June 26, 2006 | Advertising Age

HOOVER TO DYSON: IT'S ON NOW

Infuriated marketing chief heats up vacuum battle with \$120M campaign

Dave Baker is fuming. "The Dyson camp is masterful at spinning," said the VP-marketing at Hoover. So even though Hoover is being spun off from owner Whirlpool and has been knocked out of its long-held No. 1 position in the vacuum market by upstart Dyson, Mr. Baker said it plans to fight back—both in the courtroom and in the ongoing ad war of words with Dyson. It's a war in which Hoover hasn't shouted loudly, but Mr. Baker plans on changing that. In the works is a campaign from the brand's new creative agency, TBWA/Chiat/Day, that will triple the brand's ad spending. Mr. Baker told Advertising Age reporter Mya Frazier, estimated at \$40 million last year. "Then, depending on our new owner, we could spend even more."

Why are you so angry?

I have been at Hoover for 25 years,

and that's why I get very emotional about these issues. I am mad because the truth is not known. I am mad because a competitor is misleading our consumer into believing that their product is better than our product at the most important attribute the consumer is looking for: carpet cleaning.

What is your point of view on the April 17 NAD decision?

The headline you ran, "Dyson Wins One Over Hoover in Vacuum Wars." ... It looks like Dyson kicked Hoover's ass, and that is absolutely not true. They made a statement in that article that, "It's a simple victory for technology and truth," and that's just bullshit, and it sounds like something Superman says.

Why has Hoover not spoken out about this sooner?

We've been so mad we didn't want

to sound like sour grapes.

Where did Hoover win, in your opinion, within the NAD decision?

Consuming the majority of the complaint was the TV ads created by Element 79. Dyson took issue with every element and every word of that claim. But, and I'm reading straight from the decision, it reads: "Rather, NAD determined that the Hoover commercial gently mocks its competition but does not expressly or impliedly suggest that Dyson vacuum cleaners are ineffective."

Where did Dyson win, in your opinion?

Dyson challenged the plethora of claims and various elements of Hoover advertising and merchandising all the way into specific components of testing protocol, [and] Hoover prevailed in the vast majority of those challenges. They might have been a victor on a hangtag or that we

have to use the word carpet, but that's fine, because we love the word carpet.

Why aren't you challenging Dyson again at NAD?

The review board will not hear claims when parties already have entered litigation. The court case started in 2005, and we are still just in the discovery and deposition stage—it may not go into trial until mid-2007. This battle will be waged for many months and perhaps years to come.

What do you do in the meantime to try and regain Hoover's No. 1 position?

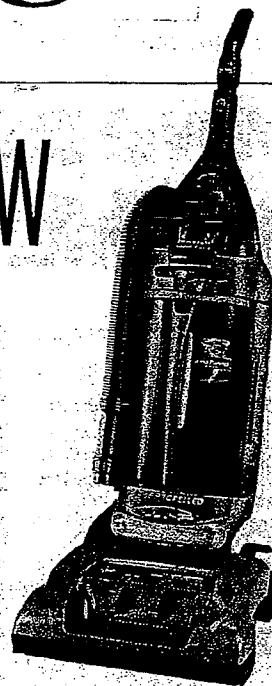
Rather than waiting until the damages mount until the point of no return, we have to compete. We don't believe in the "no loss of suction" claims because they have nothing to do with cleaning carpet.

Was it a misstep with [Hoover's] Fusion then, as you did in recent advertising, to claim the no-loss-of-suction position, as opposed to arguing that suction has nothing to do with cleaning carpet?

We plan to add a caveat to our advertising and add the disclaimer that it is not correlated to in-home cleaning activity and that it does not have a relationship to carpet-cleaning ability. It will be all over the product graphics and the packaging. It's a way to hit Dyson where they claim their superiority.

Aren't you falling into those games yourself when you claim "no loss of suction" on your Fusion?

We will modify our claim accordingly that there's no correlation to in-home cleaning results. Instead, we



are going to say that every Hoover upright out-cleans Dyson—even Hoover's lowest-priced upright with a full bag cleans carpet better than the highest-priced Dyson.

Amid the litigation, how do you still compete?

Compared to where we've been over the last few years, we are going to have a very consistent communication to consumers in all of our forms of advertising, from TV to print to the website to the shelf, that the Hoover products are the best products—by performance, by cleaning carpet period.

How are you going to do this?

We will spend money making this message loud and clear. We backed off the last few years. Even though our message may have been good and compelling, we were unable to spend and procure our level of share of voice, and we were out-shouted in a major way.

The challenge for Dyson: maintaining unique image

PRICING EXPERT John Hogan thinks Gordon Thom, president of Dyson's U.S. division, needs to take a hard look at the joint venture between General Motors and Toyota, which manufactured Nova and Corolla cars in the same plant in Freeport, Calif., in the mid-'80s. "They were virtually the same cars, but consumers were willing to pay \$1,200 more for the Toyota," said Mr. Hogan, of the Strategic Pricing Group. "That's the real question for Dyson: Can they

sustain the perception that they are unique?"

But as Dyson's distribution moves into mass channels (it's already stocked at big-box stores), it will lose more control over this important brand-building lever. After all, in high-volume channels, discounting drives volume.

But Dyson's Mr. Thom doesn't seem worried. "Pricing isn't a concern of ours. The cause of our success is that we've got the only vacuum cleaner with no loss of

suction, not because we are selling a product that costs \$400, \$500 or \$600."

Still, Mr. Hogan argues Dyson soon will be "between a rock and a hard place." He says Dyson may have tapped out the demographic willing to pay a premium. So prices go south, Hogan said, there's little the brand can do legally but threaten to pull products from a retail channel.

"That's a powerful lever to enforce pricing discipline," he said.

—MYA FRAZIER

EXHIBIT L

JUL 19 2006

WINSTON & STRAWN LLP

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1204 GENEVA, SWITZERLAND

BUCKLESBURY HOUSE
3 QUEEN VICTORIA STREET
LONDON, EC4N 8NH

333 SOUTH GRAND AVENUE
LOS ANGELES, CALIFORNIA 90071-1543

35 WEST WACKER DRIVE
CHICAGO, ILLINOIS 60601-9703

(312) 558-5600

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www.winston.com

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NEW YORK, NEW YORK 10166-4193

21 AVENUE VICTOR HUGO
75116 PARIS, FRANCE

101 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111-5894

1700 K STREET, N.W.
WASHINGTON, D.C. 20006-3817

STEPHEN P. DURCHSLAG
(312) 558-5288
sdurchslag@winston.com

July 18, 2006

VIA FEDERAL EXPRESS

Wendy Reed
Heenan Blaikie
P.O. Box 185, Suite 2600
200 Bay Street
South Tower, Royal Bank Plaza
Toronto, Ontario
Canada M5J2J4

Re: **Hoover WindTunnel and Hoover Fusion Advertising Claims**

Dear Wendy:

As you know, we represent Maytag Corporation and Maytag Limited ("Maytag") in advertising matters. This letter responds to your letter of June 30, 2006 to Blair A. Clark, in which Dyson Canada Ltd. objects to certain product and performance claims by Maytag in Canada in connection with Maytag's Hoover WindTunnel and Hoover Fusion vacuum cleaners.

In your letter, you cite to the NAD decision published on April 5, 2006 of this year in support of Dyson's assertion that the claims in your letter are false or misleading. Maytag disagrees with NAD's decision, and indicated so in its advertiser's statement. Maytag firmly believes that the each of the claims challenged in that case, including those cited in your letter, are accurate and fully substantiated. Notwithstanding, in the interest of supporting the self-regulatory process here in the United States, Maytag agreed to clarify its cleaning superiority claims (where necessary) to more clearly communicate that the such claims apply only to cleaning of carpeted surfaces, as well as to address NAD's concerns regarding the other claims at issue in the challenge in future advertising.

With regard to the WindTunnel Claims, Maytag has conducted testing per ASTM F608 that substantiates the claim that the Hoover WindTunnel "Picks up more dirt than any other bagless brand." NAD determined that ASTM F608 is representative of real life conditions in American homes. Furthermore, Maytag has indicated on the packaging that F608 is the "only recognized industry standard representing real like conditions in American homes. Maytag

WINSTON & STRAWN LLP

Wendy Reed

July 18, 2006

Page 2

believes that conditions in Canada are not significantly different from the conditions in the United States, and therefore this claim is meaningful to Canadian consumers as well as U.S. consumers. If Dyson has information to the contrary, please forward this information for our consideration.

Dyson is aware of the ASTM F608 tests submitted by Maytag in connection with the NAD proceeding. These tests include every major brand of vacuum cleaner sold in the United States and Canada. NAD reviewed these tests and concluded that these tests provided a reasonable basis for Maytag's cleaning superiority claims provided the claims are clearly limited to performance on carpet. The claims approved by NAD included broad cleaning superiority claims versus "any other brand." As WindTunnel upright vacuum cleaners are primarily designed for use on carpet, Maytag believe that that consumers understand the claim to be directed at performance on carpet. Notwithstanding, Maytag is in the process of revising the WindTunnel package to further clarify that the cleaning superiority claim is with regard to performance on carpet.

With regard to the allergen filtration claims, NAD recommended that Maytag "modify the claims to clearly indicate that they are claims limited to the component filter and not for the vacuum cleaner unit as a whole." Maytag has modified the claims on its website relating to allergen filtration in accordance with NAD's recommendations. For example, the Hoover website now states "Allergen filter traps 100% dust mites and their eggs and 99.98% of ragweed and common grass pollens." The website you refer to in your letter (<http://thebrick.com>) is that of an independent third party retailer. Maytag is in the process of contacting this retailer to request a similar modification to the claims that appear on this website.

With regard to the Hoover Fusion "No Loss of Suction" claims, Maytag is in the process of further clarifying the these claims with the following clear and conspicuous disclosure, which will appear directly after the "No Loss of Suction*" claim in the same size font: "Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning Ability." This disclosure will be linked to a further disclosure that will state: "*Suction stays constant for up to 10 ounces of dirt, using a dirt composition composed of 70% mineral dust, 20% cellulose and 10% fibrous material. No testing has established a correlation between suction performance and carpet cleaning ability in the home. Household results may vary." These disclosures adequately communicate to consumers that Maytag's "no loss of suction" claim is not a cleaning performance claim and is only for up to 10 ounces of dirt (i.e., a single use), not over time or with repeated use.

Maytag's disclosure that the "no loss of suction" claim is not related to carpet cleaning ability, together with the very clear description that this claim is based on a discreet laboratory test, clearly communicates to consumers that the claim is not a performance claim, but rather a recognized industry test dealing with vacuum cleaner suction capabilities. Notably, Dyson has been making a "no loss of suction claim" for its upright vacuum cleaners based on the same laboratory tests for years without any such disclosures. To the extent there is any

WINSTON & STRAWN LLP

Wendy Reed
July 18, 2006
Page 3

confusion in the marketplace with regard to the meaning of a claim for "no loss of suction," such confusion was clearly caused by Dyson's misleading use of this unqualified claim, and not by Maytag's carefully qualified claims. Maytag also notes that NAD did not take issue with the validity of the test results cited by Maytag as the basis for the "no loss of suction" claim.

As you are no doubt aware, Maytag has filed a counterclaim against Dyson in the United States regarding Dyson's false and misleading suction power, cleaning superiority and unqualified "no loss of suction" claims. These false and misleading claims, which appear on Dyson packaging and undoubtedly have appeared in advertising in Canada, are damaging to our client and Maytag demands that Dyson discontinue these claims immediately. Maytag reserves all legal and equitable rights in this matter.

Respectfully submitted,



Stephen P. Durchslag, Esq.

cc: Thomas Kingsbury, Esq. (Maytag Corporation)

EXHIBIT M



Designation: F 558 – 03

An American National Standard

Standard Test Method for Measuring Air Performance Characteristics of Vacuum Cleaners¹

This standard is issued under the fixed designation F 558; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This test method covers procedures for determining air performance characteristics of commercial and household upright, canister, stick, hand-held, utility, and combination-type vacuum cleaners having provisions for attaching a hose and incorporating a series universal motor. This test method can be applied to the carpet cleaning mode of operation.

1.2 These tests and calculations include determination of suction, airflow, air power, maximum air power, and input power under standard operating conditions (see Note 1). The nozzle mounted on plenum testing is an ideal air performance measurement and is not intended to represent the actual air performance during carpet or floor cleaning.

Note 1—For more information on air performance characteristics, see Refs (1-6).²

1.3 The foot-pound-inch system of units is used in this standard. The values in parentheses are given for information only.

1.4 This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. A specific precautionary statement is given in Note 2.

2. Referenced Documents

2.1 ASTM Standards:

E 1 Specification for ASTM Thermometers³

E 177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods⁴

E 691 Practice for Conducting an Interlaboratory Study to

Determine the Precision of a Test Method⁴

F 395 Terminology Relating to Vacuum Cleaners⁵

F 431 Specification for Air Performance Measurement Plenum Chamber for Vacuum Cleaners⁵

2.2 AMCA Standard:

210-85 Laboratory Methods of Testing Fans for Rating⁶

3. Terminology

3.1 Definitions:

3.1.1 *air power, AP , \bar{W} , n* —in a vacuum cleaner, the net time rate of work performed by an air stream while expending energy to produce an airflow by a vacuum cleaner under specified air resistance conditions.

3.1.2 *automatic bleed valve, n* —any device a part of a vacuum cleaner's design which automatically introduces an intentional leak within the vacuum cleaner's system when manufacturer specified conditions are met.

3.1.3 *corrected airflow, Q , cfm , n* —in a vacuum cleaner, the volume of air movement per unit of time under standard atmospheric conditions.

3.1.4 *input power, W , n* —the rate at which electrical energy is absorbed by a vacuum cleaner.

3.1.5 *model, n* —the designation of a group of vacuum cleaners having the same mechanical and electrical construction with only cosmetic or nonfunctional differences.

3.1.6 *population, n* —the total of all units of a particular model vacuum cleaner being tested.

3.1.7 *repeatability limit (r), n* —the value below which the absolute difference between two individual test results obtained under repeatability condition may be expected to occur with a probability of approximately 0.95 (95 %).

3.1.8 *repeatability standard deviation (S_r), n* —the standard deviation of test results obtained under repeatability conditions.

3.1.9 *reproducibility limit (R), n* —the value below which the absolute difference between two test results obtained under reproducibility conditions may be expected to occur with a probability of approximately 0.95 (95 %).

¹ This test method is under the jurisdiction of ASTM Committee F11 on Vacuum Cleaners and is the direct responsibility of Subcommittee F11.22 on Air Performance.

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² The boldface numbers in parentheses refer to the list of references appended to this test method.

³ Annual Book of ASTM Standards, Vol 14.03.

⁴ Annual Book of ASTM Standards, Vol 14.02.

⁵ Annual Book of ASTM Standards, Vol 15.08.

⁶ Available from Air Movement and Control Association, 30 West University Dr., Arlington Heights, IL, 60004.

3.1.10. *reproducibility standard deviation (S_R)*, n —the standard deviation of test results obtained under reproducibility conditions.

3.1.11. *sample, n* —a group of vacuum cleaners taken from a large collection of vacuum cleaners of one particular model which serves to provide information that may be used as a basis for making a decision concerning the larger collection.

3.1.12. *standard air density, ρ_{std} , lb/ft³*, n —atmospheric air density of 0.075 lb/ft³ (1.2014 Kg/m³).

3.1.12.1. *Discussion*—This value of air density corresponds to atmospheric air at a temperature of 68°F (20°C), 14.696 psi (101.325 kPa), and approximately 30 % relative humidity.

3.1.13. *suction, inch of water, n* —in a vacuum cleaner, the absolute difference between ambient and subatmospheric pressure.

3.1.14. *test run, n* —the definitive procedure that produces the singular result of calculated maximum air power.

3.1.15. *test station pressure, B_p , inch of mercury, n* —for a vacuum cleaner, the absolute barometric pressure at the test location (elevation) and test time.

3.1.15.1. *Discussion*—It is not the equivalent mean sea level value of barometric pressure typically reported by the airport and weather bureaus. It is sometimes referred to as the uncorrected barometric pressure (that is, not corrected to the mean sea level equivalent value). Refer to 5.5 for additional information.

3.1.16. *unit, n* —a single vacuum cleaner of the model being tested.

4. Significance and Use

4.1 The test results allow the comparison of the maximum potential air power available for cleaning tasks when tested under the conditions of this test method. The test results do not indicate the actual air power present during the cleaning process due to the effects of the various tools in use and surfaces being cleaned. During the nozzle-on-plenum chamber air performance testing, the brushroll is unloaded and this condition is not representative of the brushroll being in contact with carpet or other surfaces being cleaned.

5. Apparatus

5.1 *Plenum Chamber*—See Specification F 431.

5.2 *Water Manometers*, or equivalent instruments. One to measure from 0 to 6 in. (152.4 mm) in increments of 0.01 in. (0.254 mm), and one with increments of 0.1 in. (2.54 mm) for use in making measurements above 6 in. (152.4 mm).

5.3 *Wattmeter*, to provide measurements accurate to within ± 1 %.

5.4 *Voltmeter*, to provide measurements accurate to within ± 1 %.

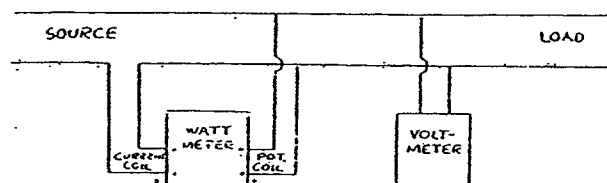


FIG. 1 Schematic Diagram of Meter Connections

5.5 *Barometer*, with an accuracy of ± 0.05 in. of mercury (1.27 mm of mercury), capable of measuring and displaying absolute barometric pressure, scale divisions 0.02 in. (0.51 mm) or finer.⁷

5.5.1. *Mercury barometers*, in general, measure and display the absolute barometric pressure. Some corrections may be needed for temperature and gravity. Consult the owner's manual.

5.5.2. When purchasing an aneroid or electronic barometer, be sure to purchase one which displays the absolute barometric pressure, not the mean sea level equivalent barometric pressure value. These types of barometers generally have temperature compensation built into them and do not need to be corrected for gravity.

5.6 *Sharp-Edge Orifice Plates*—See specifications in Specification F 431.

5.7 *Thermometer*—Solid-stem, ambient thermometer having a range from 18 to 89 °F (or -8 to +32 °C) with graduations in 0.2 °F (0.1 °C), conforming to the requirements for thermometer 63 °F (63 °C) as prescribed in Specification E 1.⁸

5.8 *Psychrometer*—Thermometers graduated in 0.2 °F (0.1 °C).⁹

5.9 *Voltage-Regulator System*, to control the input voltage to the vacuum cleaner. The regulator system shall be capable of maintaining the vacuum cleaner's rated voltage ± 1 % and rated frequency having a wave form that is essentially sinusoidal with 3 % maximum harmonic distortion for the duration of the test.

6. Sampling

6.1 A minimum of three units of the same model vacuum cleaner, selected at random in accordance with good statistical practice, shall constitute the population sample.

6.1.1 To determine the best estimate of maximum air power for the population of the vacuum cleaner model being tested, the arithmetic mean of the maximum air power of the sample from the population shall be established by testing it to a 90 % confidence level within ± 5 %.

6.1.2 Annex A2 provides a procedural example for determining the 90 % confidence level and when the sample size shall be increased (see Note 2).

NOTE 2—See annex for method of determining 90 % confidence level.

7. Procedure

7.1 *Preparation for Test:*

7.1.1 Provide the vacuum with new filters.

7.1.2 Set the manometers to zero and check all instruments for proper operation.

⁷ Mercury Barometer #453 (National Weather Service Type) below 3000-ft (900-m) elevation (Model 451X to 12 000 R (3700 m)), manufactured by Princeton Instruments Inc., 1020 Industrial Way, Southampton, PA 18966, has been found satisfactory for this purpose.

⁸ A thermometer and an armored shield, available from Thomas Scientific Co., Inc., 99 High Hill Rd., Swedesboro, NJ 08085, have been found satisfactory for this purpose.

⁹ Aspirated psychrometer Model No. 27AM280, Kahl Scientific Instrument Corporation, P.O. Box 1166, El Cajon, CA, 92020, is regularly supplied under ASTM specifications. Specify Fahrenheit or Celsius thermometers when ordering.

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7.1.3 Record the test station pressure and the dry-bulb and wet-bulb temperature readings within 6 ft of the test area. Read the barometric pressure to the nearest 0.02 in. of mercury (0.51 mm of mercury), and the dry-bulb and wet-bulb temperatures to the nearest 0.2 °F (or 0.1 °C).

7.1.3.1 The test area shall be free of major fluctuating temperature conditions due to air conditioners or air drafts that would be indicated by a thermometer at the immediate test area.

7.1.4 Connect a manometer or equivalent instrument to the plenum chamber.

7.1.5 Connect a wattmeter and a voltmeter in accordance with Fig. 4:

7.1.5.1 *Wattmeter Correction*—If needed, the indication may be corrected for voltmeter and wattmeter potential coil loss by opening the load circuit on the load side of the wattmeter with the line voltage at the operating value. The wattmeter current connection may be at its most sensitive position. Subtract this loss value from the total load indication to obtain the true load. As an alternative method, use the following equation:

$$W_c = W_i - V^2/R_T \quad (1)$$

where:

W_c = corrected wattage,

W_i = indicated wattage,

V = voltmeter reading, and

$R_T = R_P \times R_V / (R_P + R_V)$,

where:

R_T = total resistance, Ω ,

R_P = wattmeter potential coil resistance, Ω , and

R_V = voltmeter coil resistance, Ω .

7.2. *Setup—Attachment Hose* *Testing at Hose*

7.2.1 Connect the hose assembly to the plenum chamber hose adapter and seal only this connection. See Fig. 2.

7.2.1.1 The end of the hose assembly should be inserted inside the hose connector adapter and be perpendicular to the plenum chamber.

7.2.1.2 The end of the hose assembly shall not project into the plenum chamber.

7.2.2 The hose should be supported and kept straight and horizontal. Maintain the vacuum cleaner in its normal operating orientation. If the hose is not intended to enter the vacuum cleaner horizontally, gradually bend the hose with a single

bend from the intake port to the plenum chamber. Any restraining method should allow the hose coupling to seal at the cleaner. See Fig. 3.

7.3 *Test Setup—Carpet Cleaning Mode* — *Test at Nozzle*

7.3.1 Mount the cleaner plate as shown in Fig. 1e of Specification F 431 to the plenum chamber.

7.3.2 Make an adapter by any convenient method which adapts the test vacuum cleaner's nozzle opening to the opening in the cleaner plate.

7.3.3 Maintain the largest cross-sectional area possible throughout the adapter. This will prevent impeding the airflow between the plenum chamber and the test vacuum cleaner's nozzle.

7.3.4 It is recommended that the hole for the adapter/plenum chamber interface be located as close, if not directly below, the dirt-pickup duct for the test vacuum cleaner's nozzle.

7.3.5 The interface between the adapter and the test vacuum cleaner's nozzle is to be airtight. This may be achieved by an convenient means.

7.3.6 If the vacuum cleaner incorporates edge cleaning slots along the side edge(s), or slots along the front and rear edge of the bottom plate, or both, these slots should be sealed by any convenient means such as clay, tape, and so forth.

7.3.7 Do not eliminate leaks resulting from test vacuum cleaner's construction, except at the adapter/nozzle interface as described above.

7.3.8 An example of an adapter is shown in Fig. 4. This adapter uses a foam gasket material or molded low durometer urethane material shaped to fit the contour of the test cleaner's nozzle opening with sufficient surface area for sealing.

7.3.9 Attach the nozzle adapter to the plenum chamber's cleaner plate, taking care to center the adapter's opening over the hole in the cleaner plate.

7.3.10 The interface between the adapter and the plenum chamber should be airtight. The use of foam, clay, tape, or any other convenient means may be used to make this interface airtight.

7.3.11 Mount the test vacuum cleaner to the nozzle adapter by any convenient means.

7.3.12 The test vacuum cleaner, when mounted to the plenum chamber, should be set on the plenum chamber/adapter in the user position. If needed, the test vacuum cleaner's rear

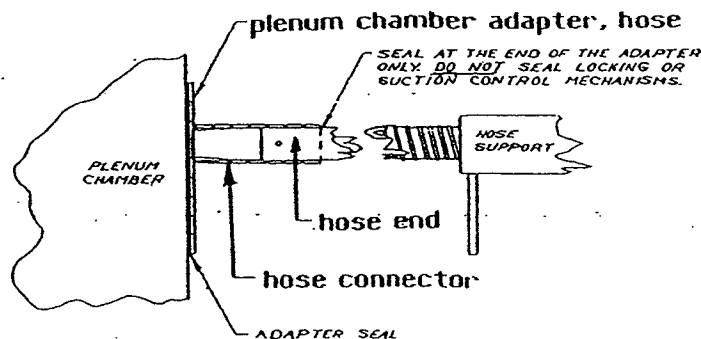


FIG. 2 Diagram of Hose and Adapter Connection

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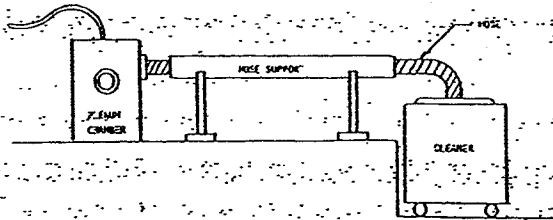


FIG. 3 Schematic for Air Performance Test

wheels should be supported to keep the cleaner's foot parallel with the plenum chamber's surface.

7.3.13 For test cleaners incorporating a pivoting handle, support the test vacuum cleaner's handle at 31.5 in. above the nozzle/adaptor surface.

7.3.14 For those vacuum cleaners which have a non-pivoting handle, support the test vacuum cleaner's handle at a height such that the cleaner's nozzle is parallel to the surface of the nozzle adapter.

7.3.15 Secure the test vacuum cleaner to the plenum chamber to prevent the test vacuum from possibly moving and breaking the airtight seal during the test.

7.4 Test Procedure:

7.4.1 Any automatic bleed valve which affects the air performance of the vacuum cleaner shall not be defeated.

7.4.2 Operate the vacuum cleaner with no orifice plate inserted in the plenum chamber inlet at nameplate rated voltage $\pm 1\%$ and frequency ± 1 Hz prior to the start of the test run to allow the unit to reach its normal operating temperature. For vacuum cleaners with dual nameplate voltage ratings, conduct testing at the highest voltage. Do this before each test run.

7.4.3 The vacuum cleaner is to be operated at its nameplate rated voltage $\pm 1\%$ and frequency ± 1 Hz throughout the test. For vacuum cleaners with dual nameplate voltage ratings, conduct the test at the highest voltage.

7.4.3.1 Allow the vacuum cleaner to operate at the open orifice for 1 to 2 min between test runs.

7.4.4 While operating the vacuum cleaner per 7.4.3, insert orifice plates sequentially into the orifice plate holder of the plenum chamber starting with the largest size orifice and following it with the next smaller orifice plate. Use the following orifice plates: 2.000, 1.500, 1.250, 1.000, 0.875, 0.750, 0.625, 0.500, 0.375, 0.250, and 0 in. (50.8, 38.1, 31.7, 25.4, 22.2, 19.0, 15.8, 12.7, 9.5, and 6.3 mm). The following optional orifice plates may also be used: 2.500, 2.250, 1.750, 1.375, and 1.125 in. (63.5, 57.2, 44.5, 34.9, and 28.6 mm).

7.4.5 For each orifice plate, record the suction, h , and input power, P , in that order. All readings should be taken within 10 s of the orifice insertion. Allow the vacuum cleaner to operate at the open orifice for 1 to 2 min before inserting the next orifice.

7.4.5.1 Read the suction to the nearest graduation of the instrument. Readings should be taken as soon as the manometer reaches a true peak. (When using a fluid type manometer, the liquid level may peak, drop, and peak again. The second peak is the true peak reading. A person conducting the test for

the first time shall observe at least one run before recording data. See Specification F 431 for instructions on how to minimize the overshoot (first peak) of the liquid level).

8. Calculation

8.1. Correction of Data to Standard Conditions:

8.1.1 Air Density Ratio—The density ratio, D_r , is the ratio of the air density at the time of test ρ_{test} to the standard air density, $\rho_{\text{std}} = 0.075 \text{ lb/ft}^3$ (1.2014 kg/m^3). It is used to correct the vacuum and wattage readings to standard conditions. Find ρ_{test} (lb/ft^3 or kg/m^3) from standard psychrometric charts or ASHRAE tables and calculate D_r as follows:

$$D_r = \frac{\rho_{\text{test}}}{\rho_{\text{std}}} \quad (2)$$

where:

ρ_{test} = the air density at the time of test, lb/ft^3 , and
 ρ_{std} = the standard air density, 0.075 lb/ft^3 .

8.1.1.1 As an alternative, the following equation is intended to be used for correcting ambient conditions where the barometric pressure exceeds 27 in mercury and the dry-bulb and wet-bulb temperatures are less than 100°F (37.8°C); and may be used as an alternate method of calculating D_r (see Appendix X1 for derivation and accuracy analysis).

$$D_r = \frac{\{17.68 B_s - 0.001978 T_w^2 + 0.1064 T_w + 0.0024575 B_s(T_d - T_w) - 2.741\}}{T_d + 459.7}$$

where:

B_s = test station pressure at time of test, in. of mercury,
 T_d = dry-bulb temperature at time of test, $^\circ\text{F}$; and
 T_w = wet-bulb temperature at time of test, $^\circ\text{F}$.

8.1.2 Corrected Suction—Corrected suction, h_s , is the manometer reading, h , times the correction factor, C_s , as follows:

$$h_s = C_s h \quad (3)$$

8.1.2.1 For series universal motors (see Ref (6)) the correction factor, C_s , is calculated as follows:

$$C_s = 1 + 0.667(1 - D_r) \quad (4)$$

8.1.2.2 This test method does not have any formulas available for correcting input power for any other type of motor (permanent magnet, induction, etc.)

8.1.3 Corrected Input Power—Corrected input power, P_s , expressed in watts, is the wattmeter reading, P , times the correction factor, C_p , as follows:

$$P_s = C_p P \quad (5)$$

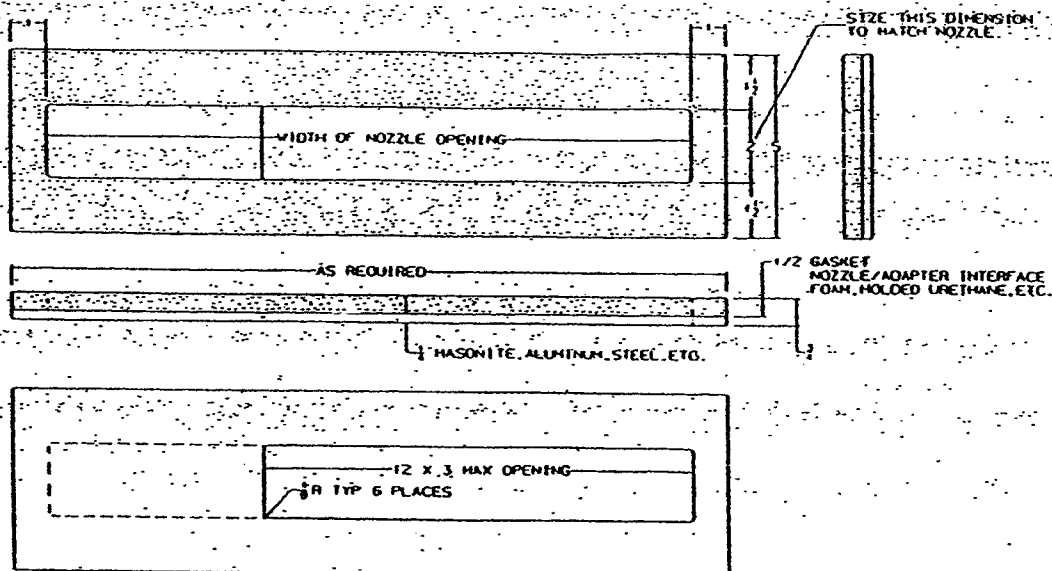
8.1.3.1 For series universal motors the correction factor, C_p , is calculated as follows:

$$C_p = 1 + 0.5(1 - D_r) \quad (6)$$

8.1.3.2 This test method does not have any formulas available for correcting input power for any other types of motor (permanent magnet, induction, etc.)

8.2 Corrected Airflow—Calculate the corrected airflow, Q , expressed in cubic feet per minute (see Note 3 and Appendix X2) as follows:

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DIMENSIONS SHOWN ARE SUGGESTED AND SHOULD BE MODIFIED AS REQUIRED TO ACHIEVE A SATISFACTORY ADAPTER.

FIG. 4 Nozzle Adapter

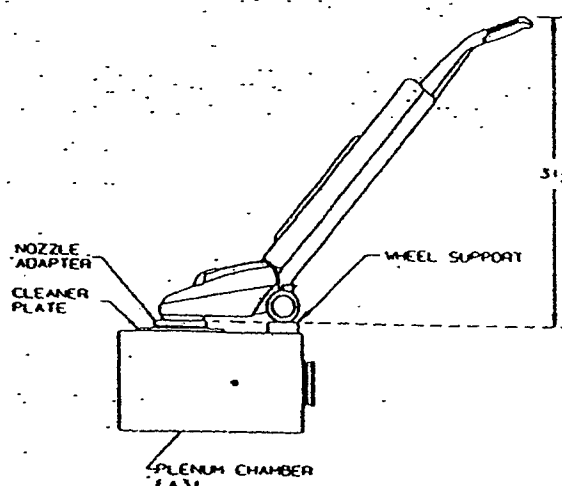


FIG. 5 Vacuum Cleaner Test Arrangement

$$Q = 21.844 D^2 K_1 \sqrt{h_s} \quad (7)$$

where:

- Q = corrected flow, cfm,
- D = orifice diameter, in.,
- K_1 = constant (dimensionless), orifice flow coefficients for orifices in the plenum chamber. See Table 1 for values for each orifice. See Ref (1) for the derivation of these flow coefficients.
- h_s = corrected suction, in. of water.

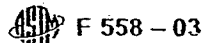
NOTE 3—For the corrected airflow expressed in liters per second, use the following equation:

$$Q = 10.309 D^2 K_1 \sqrt{h_s}$$

where:

- Q = corrected flow, L/s,
- D = orifice diameter, m,
- K_1 = constant (dimensionless), and
- h_s = corrected suction, Pa.

8.3 Air Power—Calculate the air power, AP , in watts, as follows:

TABLE 1 Orifice Flow Coefficient Equations (K_1)

NOTE 1— K_1 was determined experimentally using an ASTM plenum chamber (see Specification F 431) and an ASME flowmeter (see Ref (1)).
NOTE 2—Equations for K_1 in terms of B_1 and h are given in Appendix X6.

Orifice Diameter, in. (mm)	Orifice Flow Coefficient Equation*
0.250 (6.3)	$K_1 = \frac{0.5575r - 0.5955}{r - 1.0468}$
0.375 (9.5)	$K_1 = \frac{0.5553r - 0.5754}{r - 1.0263}$
0.500 (12.7)	$K_1 = \frac{0.5694r - 0.5786}{r - 1.0138}$
0.625 (15.8)	$K_1 = \frac{0.5692r - 0.5767}{r - 1.0104}$
0.750 (19.0)	$K_1 = \frac{0.5715r - 0.5807}{r - 1.0138}$
0.875 (22.2)	$K_1 = \frac{0.5740r - 0.5841}{r - 1.0158}$
1.000 (25.4)	$K_1 = \frac{0.5687r - 0.5785}{r - 1.0146}$
1.125 (28.6)	$K_1 = \frac{0.5675r - 0.5819}{r - 1.0225}$
1.250 (31.7)	$K_1 = \frac{0.5717r - 0.5814}{r - 1.0152}$
1.375 (34.9)	$K_1 = \frac{0.5680r - 0.5826}{r - 1.0235}$
1.500 (38.1)	$K_1 = \frac{0.5749r - 0.5820}{r - 1.0165}$
1.750 (44.5)	$K_1 = \frac{0.5695r - 0.5839}{r - 1.0235}$
2.000 (50.8)	$K_1 = \frac{0.5757r - 0.5853}{r - 1.0157}$
2.250 (57.2)	$K_1 = \frac{0.5709r - 0.5878}{r - 1.0279}$
2.500 (63.5)	$K_1 = \frac{0.5660r - 0.59024}{r - 1.0400}$

$$r = \frac{B_1(0.4912) - K(0.03607)}{B_1(0.4912)}$$

where:

B_1 = test station pressure at time of test, in. of mercury, and
 h = uncorrected suction (manometer reading), in. of water.

TABLE 2 Repeatability and Reproducibility

Test Type	Coefficient of Variation, CV %	Repeatability Limit, r	Coefficient of Variation, CV % _R	Reproducibility Limit, R
End of Hose	2.190	6.132	6.533	18.292
Nozzle	4.795	13.426	19.265	53.942

$$AP = 0.117354 (Q)(h_s) \quad (8)$$

where:

AP = air power, W,
 Q = corrected flow, cfm, and
 h_s = corrected suction, inch of water.

NOTE 4—See Appendix X3 for derivation.

8.4 Maximum Air Power—Determine the maximum air power using the method in Annex A1.

9. Report

9.1 For each vacuum cleaner sample from the population being tested, report the following information:

9.1.1 Manufacturer's name and product model name or number, or both.

9.1.2 Type of cleaner, that is, upright, canister, etc.

9.1.3 The corrected input power, corrected vacuum, corrected airflow, and air power for each orifice used.

9.1.4 Calculated maximum air power.

9.1.5 Indicate the method of testing, end of hose or nozzle on plenum.

10. Precision and Bias ¹⁰

10.1 The following precision statements are based on inter-laboratory tests involving eight laboratories and four units.

10.2 The statistics have been calculated as recommended in Practice E 691.

10.3 The following statements regarding repeatability limit and reproducibility limit are used as directed in Practice E 177:

10.4 The End of Hose Coefficients of Variation of repeatability and reproducibility of the measured results have been derived from nine sets of data, where each of two sets have been performed by a single analyst within each of the eight laboratories on separate days using the same test unit.¹⁰

10.5 The Nozzle Coefficients of Variation of repeatability and reproducibility of the measured results have been derived from seven sets of data, where each of two sets have been performed by a single analyst within each of the seven laboratories on separate days using the same test unit.¹⁰

10.6 Repeatability (Single Operator and Laboratory, Multiday Testing)—The ability of a single analyst to repeat the test within a single laboratory.

10.6.1 The expected coefficient of variation of the measured results within a laboratory, CV %_r, has been found to be the respective values listed in Table 2.

10.6.2 The 95 % repeatability limit within a laboratory, r , has been found to be the respective values listed in Table 2, where $r = 2.8$ (CV %).

10.6.3 With 95 % confidence, it can be stated that within a laboratory a set of measured results derived from testing a unit should be considered suspect if the difference between any two of the three values is greater than the respective value of the repeatability limit, r , listed in Table 2.

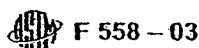
10.6.4 If the absolute value of the difference of any pair of measured results from three test runs performed within a single laboratory is not equal to or less than the respective repeatability limit listed in Table 2, that set of results shall be considered suspect.

10.7 Reproducibility (Multiday Testing and Single Operator Within Multilaboratories)—The ability to repeat the test within multiple laboratories.

10.7.1 The expected coefficient of variation of reproducibility of the average of a set of measured results between multiple laboratories, CV %_R, has been found to be the respective values listed in Table 2.

10.7.2 The 95 % reproducibility limit within a laboratory, R , has been found to be the respective values listed in Table 2; where $R = 2.8$ (CV %_R).

¹⁰ Complete data on the round-robin test is available from ASTM Headquarters. Request RR-F11-1010.



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10.7.3. With 95% confidence, it can be stated that the average of the measured results from a set of three test runs performed in one laboratory, as compared to a second laboratory, should be considered suspect if the difference between those two values is greater than the respective values of the reproducibility limit, R , listed in Table 2.

10.7.4. If the absolute value of the difference between the average of the measured results from the two laboratories is not equal to or less than the respective reproducibility limit listed in Table 2, the set of results from both laboratories shall be considered suspect.

10.8. *Bias*—No justifiable statement can be made on the accuracy of this test method for testing the properties listed. The true values of the properties cannot be established by acceptable referee methods.

11. Keywords

11.1. air performance; air power; vacuum cleaner

ANNEXES

(Mandatory Information)

A1. MATHEMATICAL METHOD FOR DETERMINING MAXIMUM AIR POWER POINT

A1.1. The following, second degree polynomial equation, is assumed to provide the best mathematical approximation of the air power versus airflow relationship.

NOTE A1.1—See Ref (4) for additional information.

$$Y = A_1 + A_2X + A_3X^2 \quad (\text{A1.1})$$

where:

Y = air power (AP),
 X = airflow (Q), and
 A_1, A_2 , and A_3 = arbitrary constants.

A1.1.1. Use X and Y values obtained from only five specific orifices selected as follows:

A1.1.1.1. Using the test data, determine the orifice size that produced the highest air power value.

A1.1.1.2. Use the air power and airflow values at this orifice, and the next two smaller and the next two larger orifices in the following computations:

A1.1.1.3. If the highest air power value calculated from the observed data is at the 2.0 in. (50.8 mm) orifice or larger, then use the air power and airflow values from the five largest orifices.

A1.2. To determine the values of A_1 , A_2 , and A_3 , use the X and Y values obtained from the five specified orifices and solve the following set of normalized equations:

$$\sum Y_i = NA_1 + A_2 \sum X_i + A_3 \sum X_i^2 \quad (\text{A1.2})$$

$$\sum X_i Y_i = A_1 \sum X_i + A_2 \sum X_i^2 + A_3 \sum X_i^3 \quad (\text{A1.3})$$

$$\sum X_i^2 Y_i = A_1 \sum X_i^2 + A_2 \sum X_i^3 + A_3 \sum X_i^4 \quad (\text{A1.4})$$

where:

N = 5 (number of orifices selected),
 i = 1 to N , and
 X_i and Y_i = the values obtained during testing ($X_1, Y_1, X_2, Y_2, \dots, X_N, Y_N$) at the five orifices specified in A1.1.1.

A1.3. Setting the derivative of Eq A1.1 equal to zero and solving for X will determine the value of X_m where Y is at its maximum value (Y_{max}) as follows:

$$\frac{dy}{dx} = \frac{d}{dx} [A_1 + A_2X + A_3X^2] = 0 \quad (\text{A1.5})$$

$$\frac{dy}{dx} = A_2 + 2A_3X = 0$$

Substitute X_m as the value of X at Y_{max} and solve for X_m :

$$X_m = -\frac{A_2}{2A_3} \quad (\text{A1.6})$$

Substituting this value of X_m and A_1 , A_2 , and A_3 , into Eq 1 will determine the value of Y_{max} (AP_{max}) as follows:

$$Y_{max} = A_1 + A_2X_m + A_3X_m^2 \quad (\text{A1.7})$$

A1.4. Calculate the goodness of fit, R (correlation coefficient) as follows:

$$R = 1 - \frac{\sum (Y_{iOBS} - Y_{iCAL})^2}{\sum (Y_{iOBS} - Y_{OBS})^2} \quad (\text{A1.8})$$

where:

$$Y_{iCAL} = A_1 + A_2X_{iOBS} + A_3X_{iOBS}^2 \quad (\text{A1.9})$$

and:

$$Y_{OBS} = \frac{1}{N} \sum Y_{iOBS} \quad (\text{A1.10})$$

and:

i = 1 to N orifices used in 7.2,
 OBS = observed data,
 CAL = calculated data, and
 Y_{iOBS} = is the air power (AP) obtained from the calculations in 8.3 for the corresponding value X_{iOBS} (airflow, Q) at any of the N orifices selected.

A1.4.1. If R is not greater than or equal to 0.900, the test must be performed again and the new set of data used.

A2. DETERMINATION OF 90 % CONFIDENCE INTERVAL

A2.1. Theory:

A2.1.1 The most common and ordinarily the best estimate of the population mean, μ , is simply the arithmetic mean, \bar{x} , of the individual scores (measurements) of the units comprising a sample taken from the population. The average score of these units will seldom be exactly the same as the population mean; however, it is expected to be fairly close so that in using the following procedure it can be stated with 90 % confidence that the true mean of the population, μ , lies within 5 % of the calculated mean, \bar{x} , of the sample taken from the population as stated in Section 6.

A2.1.2 The following procedure provides a confidence interval about the sample mean which is expected to bracket μ , the true population mean, $100(1-\alpha)$ % of the time where α is the chance of being wrong. Therefore, $1-\alpha$ is the probability or level of confidence of being correct.

A2.1.3 The desired level of confidence is $1-\alpha = 0.90$ or 90 % as stated in Section 10. Therefore $\alpha = 0.10$ or 10 %.

A2.1.4 Compute the mean, \bar{x} , and the standard deviation, s , of the individual scores of the sample taken from the population:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n X_i \quad (\text{A2.1})$$

$$s = \sqrt{\frac{n \sum_{i=1}^n X_i^2 - (\sum_{i=1}^n X_i)^2}{n(n-1)}} \quad (\text{A2.2})$$

where:

n = number of units tested, and

X_i = the value of the individual test unit score of the i th test unit. As will be seen in the procedural example to follow, this is the average value of the results from three test runs performed on an individual test unit with the resulting set of data meeting the repeatability requirements of Section 10.

A2.1.5 Determine the value of the t statistic for $n - 1$ degrees of freedom, df , from Table A2.1 at a 95 % confidence level.

TABLE A2.1 Percentiles of the t Distribution

df	$t_{0.95}$
1	6.314
2	2.920
3	2.353
4	2.132
5	2.015
6	1.943
7	1.895
8	1.860
9	1.833
10	1.812
11	1.796
12	1.782
13	1.771
14	1.761
15	1.753

Note A2.1—The value of t is defined as $t_{1-\alpha/2}$ and is read as “ t at 95 % confidence.”

$$t \text{ statistic} = t_{1-\alpha/2} = t_{0.95} \quad (\text{A2.3})$$

where:

$$1-\alpha/2 = 1 - 0.10/2 = 1 - 0.05 = 0.95, \text{ or } 95 \%$$

A2.1.6 The following equations establish the upper and lower limits of an interval centered about \bar{x} that will provide the level of confidence required to assert that the true population mean lies within this interval:

$$CI_U = \bar{x} + ts/\sqrt{n} \quad (\text{A2.4})$$

$$CI_L = \bar{x} - ts/\sqrt{n} \quad (\text{A2.5})$$

where:

CI = Confidence Interval (U - upper limit; L - lower limit),

\bar{x} = mean score of the sample taken from the population,

t = t statistic from Table A2.1 at 95 % confidence level,

s = standard deviation of the sample taken from the population, and

n = number of units tested.

A2.1.7 It is desired to assert with 90 % confidence that the true population mean, μ , lies within the interval, CI_U to CI_L , centered about the sample mean, \bar{x} . Therefore, the quantity ts/\sqrt{n} shall be less than some value, A , which shall be 5 % of \bar{x} in accordance with the sampling statement of 6.1.

A2.1.8 As $n \rightarrow \infty$, $ts/\sqrt{n} \rightarrow 0$. As this relationship indicates, a numerically smaller confidence interval may be obtained by using a larger number of test units, n , for the sample. Therefore, when the standard deviation, s , of the sample is large and the level of confidence is not reached after testing three units, a larger sample size, n , shall be used.

A2.2 Procedure—A graphical flow chart for the following procedure is shown in Fig. A2.1.

A2.2.1 Select three units from the population for testing as the minimum sample size.

A2.2.2 Obtain individual test unit scores by averaging the results of three test runs performed on each of the three individual test units. The data set resulting from the three test runs performed on each individual test unit shall meet the respective repeatability requirement found in Section 10.

A2.2.3 Compute \bar{x} and s of the sample.

A2.2.4 Compute the value of A where $A = 0.05(\bar{x})$

A2.2.5 Determine the statistic t for $n - 1$ degrees of freedom from Table A2.1 where n = the number of test units.

A2.2.6 Compute ts/\sqrt{n} for the sample and compare it to the value to A .

A2.2.7 If the value of $ts/\sqrt{n} > A$, an additional unit from the population shall be selected and tested, and the computations of steps A2.2.2-A2.2.6 repeated.

A2.2.8 If the value of $ts/\sqrt{n} < A$, the desired 90 % confidence level has been obtained. The value of the final \bar{x} may be used as the best estimate of the air power rating for the population.

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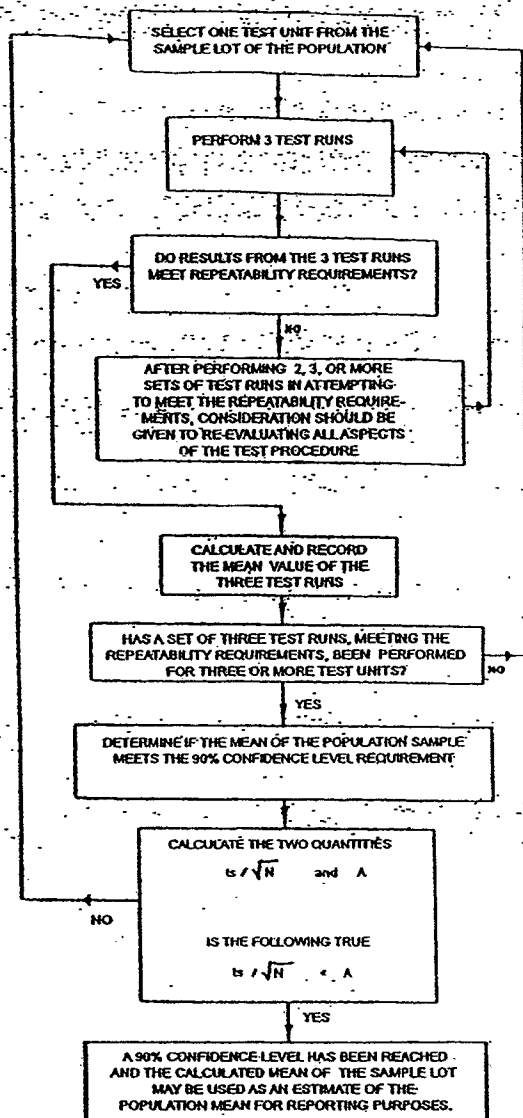


FIG. A2.1 Testing Procedure Flowchart

A2.3 Example—The following data is chosen to illustrate how the attachment hose value of air power for the population of a vacuum cleaner model is derived. The measured test results from three test runs on each unit are required to have a repeatability limit not exceeding 6.132 as indicated in Section 10.

A2.3.1 Select three test units from the vacuum cleaner model population. A minimum of three test runs shall be performed using each test unit.

A2.3.2 Test run scores for Test Unit No. 1:

Test Run No. 1 = 77.4

Test Run No. 2 = 83.4

Test Run No. 3 = 82.1

A2.3.3 Maximum spread = $83.4 - 77.4 = 6$

$$\% \text{ difference} = \text{maximum spread} / \text{maximum score} = \frac{6}{83.4} = 7.2\% \quad (\text{A2.6})$$

This value is greater than the repeatability limit required in Section 10. The results shall be discarded and three additional test runs performed.

A2.3.4 Test run scores for Test Unit No. 1:

Test Run No. 4 = 82.4

Test Run No. 5 = 80.9

Test Run No. 6 = 81.8

A2.3.5 Maximum spread = $82.4 - 80.9 = 1.5$

$$\% \text{ difference} = \text{maximum spread} / \text{maximum score} = \frac{1.5}{82.4} = 1.8\% \quad (\text{A2.7})$$

This value is less than the repeatability limit requirement of Section 10.

A2.3.6 Unit No. 1 score = $(82.4 + 80.9 + 81.8) / 3 = 81.7$

Note A2.2—If it is necessary to continue repeated test run sets (7, 8, 9, 10, 11, 12, etc.) because the spread of data within a data set is not less than the repeatability limit requirement stated in Section 10, there may be a problem with the test equipment, the execution of the test procedure, or any of the other factors involved in the test procedure. Consideration should be given to re-evaluating all aspects of the test procedure for the cause(s).

A2.3.7 A minimum of two additional test units must be tested, each meeting the repeatability limit requirement. For this procedural example, assume those units met the repeatability requirement and the individual unit scores are:

Score of Test Unit No. 1 = 81.7

Score of Test Unit No. 2 = 88.3

Score of Test Unit No. 3 = 86.6

A2.3.8

$$\bar{x} = 1 / 3 (81.7 + 88.3 + 86.6) = 85.5 \quad (\text{A2.8})$$

A2.3.9

$$s = \sqrt{\frac{3[(81.7)^2 + (88.3)^2 + (86.6)^2] - (81.7 + 88.3 + 86.6)^2}{3(3-1)}} \quad (\text{A2.9})$$

where:

$$s = 3.426$$

A2.3.10

$$A = 0.05 (85.5) = 4.276 \quad (\text{A2.10})$$

A2.3.11

$$\text{degrees of freedom, } n - 1 = 3 - 1 = 2 \quad (\text{A2.11})$$

$$t_{0.95} \text{ statistic} = 2.920$$

A2.3.12

$$ts / \sqrt{n} = 2.920 (3.426) / \sqrt{3} = 5.777 \quad (\text{A2.12})$$

A2.3.13 $5.777 > 4.276$. The requirement that $ts / \sqrt{n} < A$ has not been met because s is large. Therefore, an additional test unit from the population shall be tested.

A2.3.14 Score of Test Unit No. 4 = 84.5.

A2.3.15

$$\bar{x} = 1 / 4 (81.7 + 88.3 + 86.6 + 84.5) = 85.3 \quad (\text{A2.13})$$

A2.3.16

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$$s = \sqrt{\frac{4[(81.7)^2 + (88.3)^2 + (86.6)^2 + (84.5)^2] - [81.7 + 88.3 + 86.6 + 84.5]^2}{4(4-1)}} \quad (A2.14)$$

where:

$$s = 2.845 \quad (A2.3.17)$$

$$A = 0.05(85.3) = 4.264 \quad (A2.15)$$

$$\text{degrees of freedom, } n-1 = 4-1 = 3 \quad (A2.16)$$

A2.3.19

 $t_{0.95} \text{ statistic} = 2.353$

$$ts/\sqrt{n} = 2.353(2.845)/\sqrt{4} = 3.347 \quad (A2.17)$$

$$A2.3.20 \quad 3.347 < 4.264 \text{ (meets requirements)}$$

A2.3.21. Thus, the value of \bar{x} , 85.3, represents the air power score for the vacuum cleaner model tested and may be used as the best estimate of the air power rating for the population mean.

APPENDIXES

(Nonmandatory Information)

X1. DERIVATION OF DENSITY RATIO FORMULA

X1.1 Symbols

- D_r = density ratio, which is the air density at time of test divided by the standard density, dimensionless,
 R = gas constant, = 1545/MW, ft³/R,
 MW_a = molecular weight of dry air = 28.9644,
 MW_w = molecular weight of water vapor = 18.016 or 0.622 MW_a ,
 V = specific volume of fluid = 1/[ρ], lb/ft³,
 ρ_{std} = standard air density = 0.075 lb/ft³,
 ρ_{test} = density of moisture-laden air, lb/ft³,
 ρ_a = density of dry air portion of moisture-laden air, lb/ft³,
 ρ_w = density of water vapor portion of moisture laden air, lb/ft³,
 ρ_m = density of mercury at 32°F = 848.713 lb/ft³,
 P = absolute pressure of gas, lb/ft²,
 b = absolute pressure of gas, in. of mercury,
 B_t = test station pressure at time of test, in. of mercury,
 T = absolute temperature, °R,
 T_d = dry-bulb temperature, °F,
 T_w = wet-bulb temperature, °F,
 svp = saturated vapor pressure at wet-bulb temperature, inch of mercury, and
 e = partial vapor pressure at test condition, in. of mercury.

X1.2 Derivation

NOTE X1.1—See AMCA Standard 210-85.
 $PV = RT$ and $V = 1/\rho$, therefore
 $P/\rho = RT$ or $\rho = P/RT$

X1.2.1 Conversion of P to b :

$$P = \rho_m (b/12) = (848.713/12)b = 70.7261b \quad (X1.1)$$

X1.2.2. ρ_a Calculation:

$$R = \frac{1545}{MW_a} = \frac{1545}{28.9644} \quad (X1.2)$$

$$\rho_a = \frac{P}{RT} = \frac{70.7261b}{53.34(T_d + 459.7)}$$

$$b \text{ (dry air portion)} = (B_t - e)$$

$$\rho_a = \frac{70.7261}{53.34} \times \frac{B_t - e}{(T_d + 459.7)}$$

X1.2.3 ρ_w Calculation:

$$R = \frac{1545}{MW_w} = \frac{1545}{0.622(MW_a)} = \frac{53.34}{0.622} \quad (X1.3)$$

$$b \text{ (water vapor portion)} = e$$

$$\rho_w = \frac{70.7261}{53.34} \times \frac{0.622e}{(T_d + 459.7)}$$

X1.2.4 ρ_{test} Calculation:

$$\rho_{test} = \rho_a + \rho_w \quad (X1.4)$$

$$= \frac{70.7261}{53.34} \times \left(\frac{(B_t - e) + 0.622e}{T_d + 459.7} \right)$$

$$= \frac{1.32595(B_t - 0.378e)}{T_d + 459.7}$$

X1.2.5

$$D_r = \frac{\rho_{test}}{\rho_{std}} = \frac{\rho_{test}}{0.075} \quad (X1.5)$$

$$= \frac{17.68(B_t - 0.378e)}{T_d + 459.7}$$

X1.2.6

$$e = svp - B_t \frac{(T_d - T_w)}{2700} \quad (X1.6)$$

X1.2.7

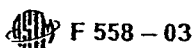
$$svp = 2.9599 \cdot 10^{-4} T_w^2 - 1.5927 \cdot 10^{-2} T_w + 4.102 (10^{-1}) \quad (X1.7)$$

X1.2.8 Combining the equations in X1.2.5, X1.2.6, and X1.2.7:

$$D_r = [17.68B_t - 0.001978T_w^2 + 0.1064T_w + 0.0024575B_t(T_d - T_w) - 2.741T_w(T_d + 459.7)] \quad (X1.8)$$

X1.3 Error Analysis for Usable Range of svp Equation

NOTE X1.2—See error analysis for usable range in AMCA Standard 210-85.



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COMPUTATION METHODS FOR SVP COMPARISON

X1.3.1 The *svp* equation is taken from AMCA Standard 210-85 and used in X1.2 versus *svp* value tabulations in Ref (2).

ANALYSIS

X1.3.2 Probability of Error in *svp*:

X1.3.2.1 The plot of data shows very little error at 80°F (26.7°C) and below but increasingly larger error as T_w increases above 80°F.

EFFECT ON SVP ERROR ON CALCULATION OF E

(X1.2.6)

X1.3.3 The worst error is when $T_d = T_w$ (that is, 100 % relative humidity). At that point the "e" error = *svp* error. Error in "e" reduces with decreasing humidity.

EFFECT OF ERROR IN *SVP* ON CALCULATION OF D (X1.2.5)

X1.3.4 The $B = 0.378e$ factor greatly reduces any error in "e" (or *svp*) since B is far greater in magnitude than $0.378e$.

X1.3.4.1 The worst-error case is with lowest "B" and highest "e."

CONCLUSION

X1.3.5 The worst-error condition is with low barometric condition, high wet-bulb temperature, and 100 % relative humidity.

X1.3.6 If the D_r equation is restricted to minimum value of $B = 27.00$ in. of mercury absolute and maximum value of $T_w = 100^\circ\text{F}$ (37.8°C) then at the worst-case condition of 100 % relative humidity the D_r error = +0, -0.23 %.

X2. DERIVATION OF AIR FLOW FORMULA FROM ASME STANDARDS

X2.1 From Ref (3), p. 54, eq. (1-5-36):

$$Q_1 = 0.099702 \frac{(CYd^2F_e)}{(\sqrt{1-\beta^4})} \sqrt{\frac{h_s}{\rho_{std}}} \quad (X2.1)$$

where:

Q_1 = flow rate at standard, air density and temperature, ft³/s,

C = coefficient of discharge, dimensionless,

Y = expansion factor, dimensionless,

F_e = thermal expansion factor, dimensionless,

β = d/D , dimensionless;

d = orifice diameter, in.,

D = diameter of pipe upstream, in.,

h_s = differential pressure at standard conditions in. H₂O, and

ρ_{std} = air density at standard conditions, 0.075 lb/ft³.

X2.1.1 This equation determines the rate of gas flow in a pipe system, and measured with a venturi tube, a flow nozzle, or an orifice plate measuring device mounted in the pipe.

X2.1.2 The equation (1-5-36) from Ref (3), page 54, uses the symbol ρ_1 instead of ρ_{std} for the air density at standard conditions, q_1 instead of Q_1 for flow rate at standard air density and temperature, and h_s instead of h_w for differential pressure at standard conditions. The symbols ρ_1 , q_1 , and h_w were changed to ρ_{std} , Q_1 and h_s respectively as a matter of consistency within this standard and clarity. ($\rho_1 = \rho_{std}$, $h_s = h_w$, $Q_1 = q_1$).

X2.2 Converting to ft³/min flow rate, substituting 0.075 for the value of ρ_{std} substituting K for $CF_d/\sqrt{1-\beta^4}$ and simplifying:

$$Q = 21.844KYd^2\sqrt{h_s} \quad (X2.2)$$

where:

Q = flow rate at standard, air density and temperature, cfm,

K = orifice flow coefficient, dimensionless,

d = orifice diameter, in., and

h_s = differential pressure at standard conditions, in. of water.

X2.3 The ASTM plenum chamber, as specified in Specification F 431, is not a measuring device that uses a pipe. The flow from ambient into the sharp edged orifice plate is unrestricted and a plenum chamber is placed immediately downstream of the orifice plate.

X2.3.1 Thus the orifice flow coefficient, K , and the expansion factor, of X2.2 are different for the plenum chamber specified in Specification F 431.

X2.3.2 For the plenum chamber specified in Specification F 431, the combination of the orifice flow coefficient K , and the expansion factor, Y , were empirically determined as a singular, orifice flow coefficient K_1 .

X2.3.3 The value of K_1 will vary for each of the orifice plates identified in Section 8.

X2.4 Replacing K and Y in the equation of X2.2 with K_1 results in:

$$Q = 21.844 K_1 d^2 \sqrt{h_s} \quad (X2.3)$$

where:

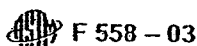
Q = flow rate at standard, air density and temperature, cfm,

K_1 = orifice flow coefficient for the Specification F 431 plenum chamber, dimensionless,

d = orifice diameter, in., and

h_s = differential pressure at standard conditions, in. of water.

X2.4.1 This equation determines the rate of gas flow, in ft³/min through a thin plate square edged orifice, mounted in accordance with Specification F 431.



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X3. DERIVATION OF AIR POWER EQUATION

X3.1 Power is defined as the rate of doing work in a given period of time and can be expressed by the following general equation:

$$P = Fv \quad (X3.1)$$

where:

P = power,
 F = force, and
 v = velocity.

X3.2 Air power as defined in the terminology section (see 3.1.1) is the net time rate of work performed by an air stream while expending energy to produce air flow by a vacuum cleaner under specified air resistance conditions, expressed in watts. Therefore air power is:

$$AP = 745.7/33000 Fv \quad (X3.2)$$

where:

AP = air power, W;
 F = force generated by the air stream passing through the orifice, lbs, and
 v = velocity, ft/min.

X3.2.1 The constant 745.7/33000 is used to maintain the correct set of units.

$$1 \text{ watt} = \frac{33000 \text{ ft} \cdot \text{lb}}{745.7 \text{ min}} \quad (X3.3)$$

X3.3 For an air stream passing through a given orifice size:

X3.3.1 The force is given by the following equation:

$$F = \frac{1}{12} p h_s A \quad (X3.4)$$

where:

F = force generated by air stream passing through the orifice, lbs,
 p = density of water at (68°F), 62.3205 lb/ft³,
 h_s = differential pressure at standard conditions, in. of water, and
 A = cross sectional area of the orifice, ft².

X3.3.1.1 The constant $1/12$ is used to maintain the correct set of units

$$F (\text{lbs}) = \frac{1}{12} \left(\frac{\text{ft}}{\text{in.}} \right) p \left(\frac{\text{lb}}{\text{ft}^3} \right) h_s (\text{in.}) A (\text{ft}^2) \quad (X3.5)$$

X3.3.2 The velocity is given by the following equation:

$$v = Q/A \quad (X3.6)$$

where:

v = velocity of air stream passing through the orifice, ft/min,
 Q = flow rate at standard air density and temperature, cfm, and
 A = cross sectional area of the orifice, ft².

X3.4 Substituting equations from X3.3.1 and X3.3.2 into the equation of X3.2, $p = 62.3205 \text{ lb/ft}^3$, and simplifying;

$$AP = 0.117354 h_s Q \quad (X3.7)$$

where:

AP = air power, W,
 h_s = differential pressure at standard conditions, in. of water, and
 Q = flow rate at standard air density and temperature, cfm.

X3.4.1 This is the equation used to calculate the air power in 8.3.

X4. STANDARD CONDITIONS

X4.1 Dry-bulb temperature, $T_D = 68^\circ\text{F}$.

X4.2 Atmospheric pressure = 14.69595 psi.

X4.3 Relative humidity (approximate) = 30 %.

X4.4 Density of mercury at 32°F (Note X4.1), (ρ_{H_g}) = 848.71312 lb/ft³.

X4.5 Density of water at 68°F, (ρ_{water}) = 62.3205 lb/ft³

X4.6 Density of air at 68°F, 30 % relative humidity, $\rho_0 = 0.075 \text{ lb/ft}^3$.

X4.7 Barometer reading, $B_0 = \rho_0/\rho \text{ Hg}/(12)^3 = 14.69595 (1728)/848.71312 = 29.9213 \text{ in. Hg at } 32^\circ\text{F}$ (Note X4.1).

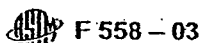
X4.8 Water column height = $\rho_0/\rho_{\text{water}}/(12)^3 = 14.69595 (1728)/62.3205 = 407.4829 \text{ in. H}_2\text{O at } 68^\circ\text{F}$.

X4.9 To convert inches of mercury at 32°F to pounds force per square inch, multiply by $14.69595/29.921 = 0.491153$ (use 0.4912).

X4.10 To convert inches of water at 68°F to pounds force per square inch, multiply by $14.69595/407.4839 = 0.03606511$ (use 0.03607).

NOTE X4.1—Mercury barometer readings are to be corrected to 32°F. See Kent's Mechanical Engineers Handbook.

X4.11 All constants are from AMCA Standard 210-85 and Refs (3) and (4).



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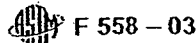
X5. MINIMUM AND MAXIMUM h VALUES BY ORIFICE SIZE

Orifice Diameter, in. (mm)	Manometer Reading, in. H ₂ O	
	min	max
0.250 (6.3)	0.1	109
0.375 (9.5)	0.1	100
0.500 (12.7)	0.1	91
0.625 (15.8)	0.1	81
0.750 (19)	0.1	72
0.875 (22.2)	0.1	63
1.000 (25.4)	0.1	55
1.250 (31.7)	0.1	40
1.500 (38.1)	0.1	26
2.000 (50.8)	0.1	11

X6. ALTERNATE EQUATIONS FOR FINDING ORIFICE FLOW COEFFICIENT

Note X6.1—These equations are the results of substituting the r equation into the Table 1, K , equations.

Orifice Diameter, in. (mm)	Flow Coefficient	Orifice Diameter, in. (mm)	Flow Coefficient
0.250 (6.3)	$K_t = \frac{0.020109h + 0.018665B_t}{0.03607h + 0.022988B_t}$	1.250 (31.7)	$K_t = \frac{0.020621h + 0.004764B_t}{0.03607h + 0.007466B_t}$
0.375 (9.5)	$K_t = \frac{0.020029h + 0.009873B_t}{0.03607h + 0.012918B_t}$	1.375 (34.9)	$K_t = \frac{0.020488h + 0.007172B_t}{0.03607h + 0.011543B_t}$
0.500 (12.7)	$K_t = \frac{0.0205382h + 0.004519B_t}{0.03607h + 0.006786B_t}$	1.500 (38.1)	$K_t = \frac{0.020628h + 0.004961B_t}{0.03607h + 0.008104B_t}$
0.625 (15.8)	$K_t = \frac{0.020531h + 0.003684B_t}{0.03607h + 0.005108B_t}$	1.750 (44.5)	$K_t = \frac{0.020542h + 0.007073B_t}{0.03607h + 0.011543B_t}$
0.750 (19)	$K_t = \frac{0.020614h + 0.004519B_t}{0.03607h + 0.006778B_t}$	2.000 (50.8)	$K_t = \frac{0.020765h + 0.004715B_t}{0.03607h + 0.0077118B_t}$
0.875 (22.2)	$K_t = \frac{0.020704h + 0.004961B_t}{0.03607h + 0.0077609B_t}$	2.250 (57.2)	$K_t = \frac{0.020592h + 0.008301B_t}{0.03607h + 0.013704B_t}$
1.000 (25.4)	$K_t = \frac{0.020513h + 0.004813B_t}{0.03607h + 0.00717152B_t}$	2.500 (63.5)	$K_t = \frac{0.020416h + 0.011907B_t}{0.03607h + 0.019648B_t}$
1.125 (28.6)	$K_t = \frac{0.020470h + 0.007073B_t}{0.03607h + 0.011052B_t}$		



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X7. EXAMPLE OF CALCULATING AIR POWER AT TWO DIFFERENT TEST LOCATIONS

X7.1 This example shows the calculations of air density for two different test locations at two different elevations and the results of the maximum air power calculations.

X7.2 This example attempts to show the importance of using the test station pressure or absolute barometric pressure in the calculations of the air density instead of the equivalent mean sea level value of the absolute barometric pressure.

X7.2.1 Air density or the weight of the air per unit volume at a particular test location is influenced by the local weather conditions, the test locations height above sea level, the heating, cooling and ventilation system of the test facility, etc.

X7.2.1.1 In general, air density decreases as the elevation increases. The amount of the atmosphere above the test location decreases as elevation increases; thus the weight of the air above the test location decreases resulting in a lower air density.

X7.2.1.2 Air density is effected by the amount of moisture within the air. Water vapor adds weight to the air.

X7.3 For this example, a vacuum cleaner having the characteristics shown in Table X7.1 at standard air density conditions in accordance with 3.1.4 shall be used.

X7.3.1 The calculated maximum air power for this unit is 152 air watts.

X7.3.2 It will be assumed that this cleaner performs perfectly each time it is used (that is, no motor performance variations, the hose is laid out the exact same way for each test etc.)

TEST LOCATION 1: LOW ELEVATION

X7.4 In Harrisburg, PA, an independent test laboratory located 355 ft above sea level measured the maximum air power of the vacuum cleaner described in X7.3 per Specification F 558. At the test location and test time, the laboratory measured the test station pressure, B_t , the wet bulb temperature, T_w , and the dry bulb temperature, T_d . Their values were recorded as follows:

$$B_t = 29.10 \text{ in. Hg}$$

$$T_w = 61.0^\circ\text{F}$$

$$T_d = 70.0^\circ\text{F}$$

X7.4.1 The test station pressure, B_t , or absolute barometric pressure was measured with a mercury barometer. The actual reading of the barometer was adjusted for latitude and temperature per the mercury barometers instruction manual.

X7.4.2 The test laboratory also recorded the equivalent mean sea level barometric pressure value. This value was obtained from their local airport. It was 29.50 inHg and represented what the barometric pressure would be at 0 ft elevation not at the test laboratories elevation of 355 ft.

X7.5 The air density ratio, D_r , was computed using the values in X7.4 because these were the ambient conditions at the test location at the time of the test. D_r was calculated as follows:

$$D_r = \frac{17.68(29.10) - 0.001978(61.0)^2 + 0.1064(61.0) + 0.0024575(29.10)(70.0 - 61.0) - 2.741}{(70.0 + 459.7)}$$

$$D_r = 0.9657$$

X7.6 Using the value for D_r , the suction correction factor C_s and the input power correction factor, C_p were calculated as shown below:

$$C_s = 1 + 0.667(1 - D_r) \quad C_p = 1 + 0.5(1 - D_r) \quad (X7.1)$$

$$C_s = 1 + 0.667(1 - 0.9657) \quad C_p = 1 + 0.5(1 - 0.9657)$$

$$C_s = 1.0229 \quad C_p = 1.0172$$

X7.7 These correction factors were then used to compute the corrected suction h_s and the corrected input power P_i . In addition the airflow and air watt values were calculated for each orifice plate. The results are shown in Table X7.2.

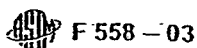
X7.7.1 The following calculations show an example of how the corrected suction, h_s , correct input power, P_i , airflow, Q , and

TABLE X7.1

Orifice Diameter (in.)	Input Power, P_s (watts)	Suction, h_s (in. H ₂ O)	Airflow, Q (cfm)	Air Power, AP (air watts)
2.500	768	1.70	107.2	21.4
2.000	766	3.80	101.9	45.5
1.750	761	6.00	97.7	68.8
1.500	757	9.40	88.7	97.9
1.375	750	11.70	83.6	114.8
1.250	742	14.30	76.4	128.3
1.125	731	17.70	68.7	142.8
1.000	716	21.50	60.1	151.7
0.875	693	25.70	49.8	150.3
0.750	666	30.40	39.7	141.7
0.625	637	35.20	29.6	122.3
0.500	603	40.20	20.1	94.9
0.375	566	44.50	12.2	63.7
0.250	538	47.00	5.9	32.6
0.000	519	49.30	0.0	0.0

TABLE X7.2

Measured Data			Corrected Data (Data at Standard Conditions)			
Orifice Diameter (in.)	Input Power (watts)	Suction (in. H ₂ O)	Input Power, P_i (watts)	Suction, h_s (in. H ₂ O)	Airflow, Q (cfm)	Air Power, AP (air watts)
2.500	755	1.66	768	1.6980	107.1341	21.3483
2.000	753	3.71	766	3.7949	101.8055	45.3390
1.750	748	5.87	761	6.0044	97.7049	68.8465
1.500	744	9.19	757	9.4004	88.6998	97.8511
1.375	737	11.44	750	11.7019	83.6217	114.8346
1.250	729	13.98	742	14.3000	76.3714	128.1638
1.125	719	17.3	731	17.6960	68.8672	143.0164
1.000	704	21.02	716	21.5012	59.8448	151.0033
0.875	681	25.12	693	25.6950	49.7649	150.0619
0.750	655	29.72	666	30.4003	39.7197	141.7041
0.625	626	34.41	637	35.1977	29.6375	122.4203
0.500	593	39.3	603	40.1996	20.1266	94.9488
0.375	556	43.5	566	44.4958	12.2060	63.7367
0.250	529	45.95	538	47.0019	5.9030	32.5601
0.000	510	48.2	519	49.3034	0.0000	0.0000



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the air power, AP , were computed for each orifice. In the calculations below the 0.750 in. diameter orifice data was used.

X7.7.1.1 The corrected suction was calculated as follows:

$$\begin{aligned} h_s &= C_s h \\ h_s &= (1.0229)(29.72) \\ h_s &= 30.4003 \end{aligned} \quad (X7.2)$$

X7.7.1.2 The corrected input power was calculated as follows:

$$\begin{aligned} P_s &= C_p P \\ P_s &= (1.0172)(655) \\ P_s &= 666 \end{aligned} \quad (X7.3)$$

X7.7.1.3 The airflow for the 0.750 in. diameter orifice was calculated as follows:

$$\begin{aligned} Q &= 21.844 D^2 K_1 \sqrt{h_s} \\ K_1, \text{ for 0.750 in. orifice} &= \frac{0.5715r - 0.5807}{r - 1.0138} \\ r &= \frac{B_s(0.4912) - h(0.03607)}{B_s(0.4912)} \\ D &= 0.750 \quad B_s = 29.10 \\ h &= 29.95 \quad h_s = 30.40 \end{aligned} \quad (X7.4)$$

Solving for r :

$$r = \frac{29.10(0.4912) - 29.95(0.03607)}{29.10(0.4912)} = 0.9244 \quad (X7.5)$$

Solving for K_1 :

$$K_1 = \frac{0.5715(0.9244) - 0.5807}{(0.9244) - 1.0138} = 0.5862 \quad (X7.6)$$

Solving for Q :

$$Q = 21.844(0.750)^2(0.5862)\sqrt{30.40} = 39.7197 \quad (X7.7)$$

X7.7.1.4 For the air power the calculations were as follows:

$$\begin{aligned} AP &= 0.117354 Q h_s \\ AP &= 0.117354 (39.7197)(30.4003) \\ AP &= 141.7041 \end{aligned} \quad (X7.8)$$

X7.7.2 The calculations shown in X7.7.2 were made for each of the various orifice plates sizes used in the test.

X7.7.3 The maximum air power was calculated in accordance with the procedure outlined in Appendix X1 and found to be 152 air watts. This is in agreement with the vacuum cleaners characteristics described in X7.3.

X7.8 Had the independent laboratory incorrectly computed the maximum air power using the equivalent mean sea level value of barometric pressure (rather than absolute), the incorrectly calculated maximum air power would have been 150 air watts. (Based on incorrect air density ratio $D_r = 0.9790$; using $B_s = 29.50$, $T_w = 61.0^\circ\text{F}$, and $T_d = 71.0^\circ\text{F}$).

X7.8.1 Although the data was incorrect, the laboratory observed in their case that it did not make much difference in the results. This was due to the small difference between the test station pressure and the equivalent mean sea level value. (The small difference was a result of the test laboratory only being 355 ft above mean sea level).

X7.8.2 It is also worth noting that had the test laboratory actually tested the vacuum cleaner under the 29.50 inHg barometric pressure, the measured suction and input power values would have been slightly different for the vacuum cleaner.

TEST LOCATION 2: HIGH ELEVATION

X7.9 In El Paso, TX, an independent test laboratory located 3700 ft above sea level measured the maximum air power of the vacuum cleaner described in X7.3 per Specification F 558.

X7.10 At the test location and test time, the laboratory measured the test station pressure, B_s , the wet bulb temperature, T_w , and the dry bulb temperature, T_d . Their values were recorded as follows:

$$\begin{aligned} B_s &= 24.86 \text{ in. Hg} \\ T_w &= 64.0^\circ\text{F} \\ T_d &= 80.0^\circ\text{F} \end{aligned}$$

X7.10.1 The test station pressure, B_s , or absolute barometric pressure was measured with an aneroid barometer. The actual reading of this particular aneroid barometer gave the absolute barometric pressure value and did not need any adjustments. It was noted in the instruction manual that this barometer had temperature compensation built into it.

X7.11 The test laboratory also recorded the equivalent mean sea level barometric pressure value. This value was obtained from a digital weather station within their laboratory that had been originally set up to report the mean sea level equivalent barometric pressure to coincide with local weather reports. The value was 28.64 inHg and represented what the barometric pressure would be at 0 ft elevation not at the test laboratories elevation of 3700 ft.

X7.12 The air density ratio, D_r , was computed using the values in X7.10 as follows:

$$\begin{aligned} D_r &= \frac{17.68(24.86) - 0.001978(64.0)^2}{0.1064(64.0) + 0.0024575(24.86)(80.0 - 64.0) - 2.741} \\ &\quad (80.0 + 459.7) \\ D_r &= 0.8087 \end{aligned}$$

X7.13 Repeating the same calculation in X7.6 and X7.7 using the density ratio D_r from X7.12, the results are shown in Table X7.3.

X7.13.1 The air power was calculated to be 152 air watts.

X7.14 Had the independent laboratory incorrectly computed the maximum air power using the equivalent mean sea level value of barometric pressure (rather than absolute), the incorrectly calculated maximum air power would have been 136 air watts. (Based on incorrect air density ratio $D_r = 0.9328$; using $B_s = 28.64$, $T_w = 64.0^\circ\text{F}$, and $T_d = 80.0^\circ\text{F}$).

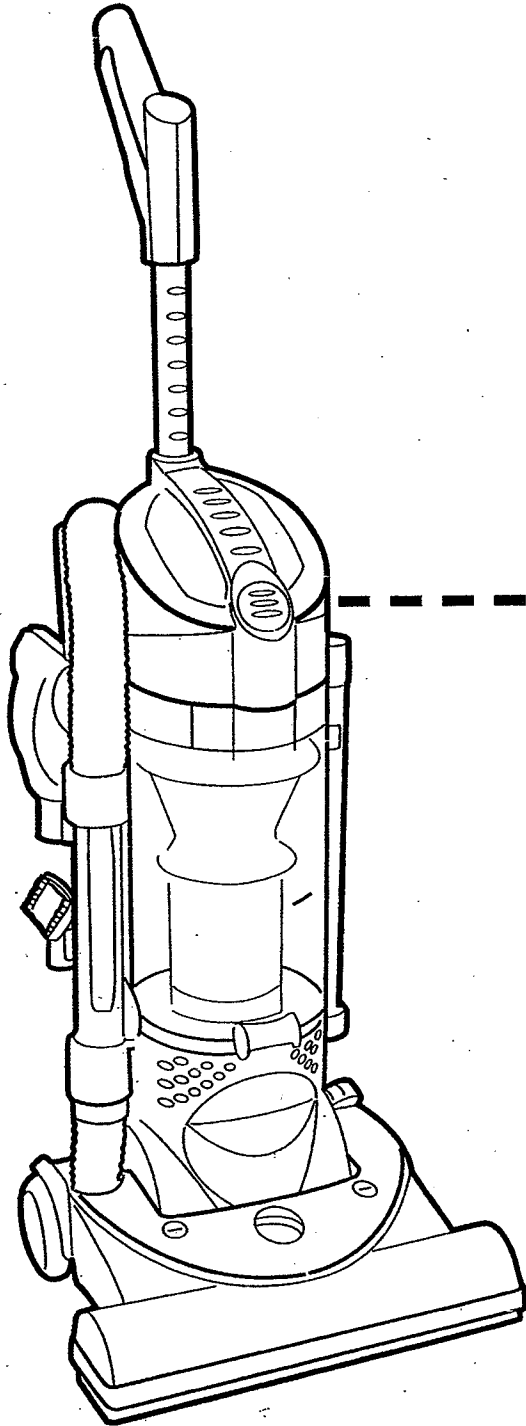
X7.14.1 Seeing the difference, the independent test laboratory realized it was very important to use the correct test station barometric pressure to ensure that the data they would distribute would correlate with other test laboratories at different elevations operating under a different air density.

EXHIBIT N

HOOVER[®]

FUSION[™]

Cyclonic Filtration System



Owner's Manual

ENGLISH → pp. 1-12

ESPAÑOL → pág 13-20

FRANÇAIS → p. 21-27

**This product was designed for
easy assembly (see page 3)**

**Review this manual before
operating the cleaner.**

Cleaning tools

Tools allow for cleaning surfaces above the floor and for reaching hard to clean areas.

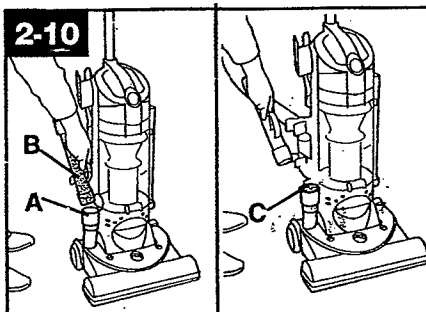
The cleaner is ready for tool use when **handle is in upright position**.

CAUTION: The agitator continues to rotate while cleaner handle is in upright position. Avoid tipping cleaner or setting it on furniture, fringed area rugs or carpeted stairs during tool use.

How to clean tools

To clean the hose, wipe off dirt with a cloth dampened in a mild detergent. Rinse with a damp cloth.

Cleaning tools may be washed in warm water with a detergent. Rinse and air dry before using.

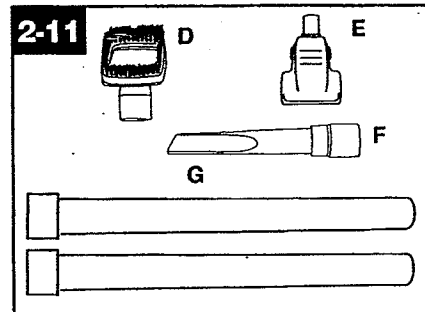


Removing hose

When using cleaning tools, **cleaner handle should be in the upright position**. Also, **turn cleaner OFF before disconnecting and connecting hose to hose tube (A)**.

To use hose, lift hose end (B) as shown. Check to be sure the hose tube cover (C) is closed over the hose tube.

When you are finished cleaning with the tools, lift cover from hose tube and reposition hose end into tube.



Select proper tool

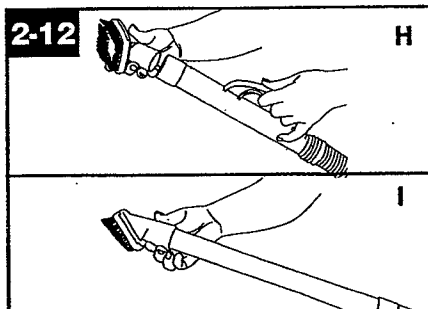
D. Combination tool use with brush for carved furniture, table tops, books, lamps, lighting fixtures, venetian blinds, baseboards, shutters, and registers.

Remove brush to clean upholstered furniture, draperies, mattresses, clothing, and carpeted stairs.

E. Powered hand tool may be used for upholstered furniture, draperies, mattresses, clothing, automobile interiors, and carpeted stairs.

F. Crevice tool may be used in tight spaces, corners and along edges in such places as dresser drawers, upholstered furniture, stairs and baseboards.

G. Wands are used to give extra length to your hose. Use them with any of the above tools.

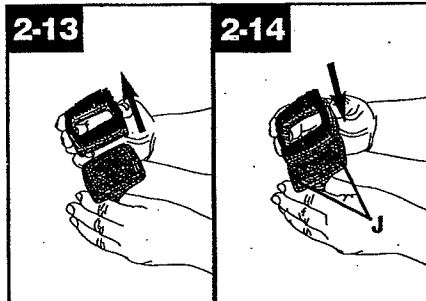


Attach wand and tools

Attach tool or wand to the hose (H).

Attach tool to wand (I) by pushing it firmly onto the wand.

Twist wand or tool slightly to tighten or loosen the connection.



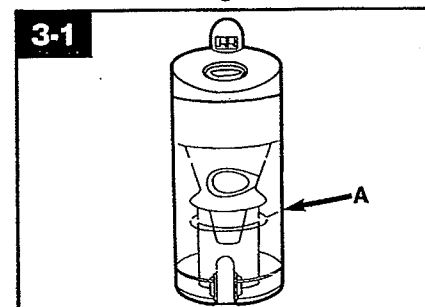
Combination tool

Slide brush to remove.

To replace brushes, align bottom of brush with grooves (J) on tool. Slide brush into place.

3. Maintenance

Familiarize yourself with these home maintenance tasks as proper use and care of your cleaner will ensure continued cleaning effectiveness.



Dirt cup

When to empty

It is recommended that the dirt cup be emptied before the dirt reaches the fill line (A), or after every use if preferred.

CAUTION: Very fine materials, such as face powder or cornstarch, may seal the filter and cause loss of suction. When using the cleaner for this type of dust, empty the cup and clean the filters often.

EXHIBIT O

**UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

DYSON, INC.,

Plaintiff,

v.

MAYTAG CORPORATION,

Defendant.

Civil Action No. 06-CV-6576(DC)

DECLARATION OF SUSAN H. GOLDSMITH

I, Susan H. Goldsmith, declare and state as follows:

1. I am the co-owner of Inter Basic Resources, Inc. ("IBR"). At IBR, I hold the titles of Managing Director and Director of Technical Services. I founded IBR in 1984 and have been the co-owner of the company since 1984. I provide the following testimony, based upon my personal knowledge, except where stated upon information and belief, and, if called as a witness, could and would testify competently to these facts.

Experience and Qualifications

2. I have Bachelor of Science degrees in Cellular Biology and Chemical Engineering from the University of Michigan in 1978, and I have written over 30 technical papers. Prior to founding IBR in 1984, I held various positions at Gelman Sciences in Ann Arbor, Michigan, from 1978 through 1984, focusing on aspects of filtration and membrane engineering. I founded IBR in 1984 to focus exclusively on the testing of filtration and particulate monitoring, performance and control. In that position, I have spent the last 20 years studying these

engineering issues, and designing, performing and supervising tests regarding filtration and membranes (including vacuum technology, which, at times, relies on filtration). My curriculum vitae is attached as Exhibit 1 to this declaration.

3. I am an active member of ASTM International F11 Committee, which is responsible for F558 (Standard Test Method for Measuring Air Performance Characteristics of Vacuum Cleaners) and F608 (Standard Test Method for Evaluation of Carpet Embedded Dirt Removal Effectiveness of Household/Commercial Vacuum Cleaners), among other ASTM standards, and Working Group 3 of the International Electrotechnical Commission ("IEC") Committee for Standard 60312 (Vacuum Cleaners for Household Use – Methods for Measuring the Performance). I have served on the ASTM International F11 Committee for approximately 10 years. I have served on the IEC Committee for Standard 60312 for five years. I serve on the general and task levels of the ASTM committees. Many of my fellow members on the IEC Committee for Standard 60312 are representatives from major vacuum manufacturers and distributors.

4. Both the ASTM and IEC are voluntary industry organizations that provide consensus technical standards for materials, products, systems, and services that guide design, manufacturing, and trade in the global economy. As a member of the IEC and ASTM Committees that deal with measuring vacuum cleaner performance, I am intimately familiar with the design, procedure and theory of vacuum cleaner testing. I also am intimately familiar with how both the ASTM and IEC tests are performed and understand their respective scopes, uses, and limitations.

5. I currently am responsible for the day-to-day operations of IBR. IBR provides high accuracy instrumentation and testing services for filter and filtration systems testing. Founded in

1984, IBR is a privately held, independent corporation headquartered in Grass Lake, Jackson County, Michigan, USA. IBR also has a facility located in Milton Keynes, United Kingdom.

6. IBR's Testing Lab is accredited for filter testing, particulate counting, and particulate cleanliness testing of critical components by the independent and internationally recognized American Association for Laboratory Accreditation ("A2LA"). To my knowledge, the IBR Testing Lab is the only lab of its kind accredited by the A2LA.

7. The IBR Test Lab provides comprehensive performance testing services to the vacuum cleaner industry, as well as to the drinking water, automotive, hydraulic, industrial processing, semiconductor, medical, and pharmaceutical industries.

8. IBR regularly conducts vacuum cleaner performance testing in its Test Lab. IBR tests vacuum cleaners according to both the ASTM and IEC standards. Because of its unique capabilities and reputation in the field, IBR has tested vacuum cleaners on behalf of all of the major vacuum cleaner manufacturers throughout the world.

Conduct of the IEC 60312 Tests on Maytag Legacy and Hoover Fusion

9. IBR was retained by Dyson, Inc. ("Dyson") to test the Maytag Legacy and Hoover Fusion upright vacuum cleaners pursuant to IEC Standard 60312, part 2.9 ("Performance with a loaded dust receptacle") (draft edition 4.0). A copy of this IEC standard is attached hereto as Exhibit 2.

10. The IEC 60312 standard is a consensus standard that was developed by the vacuum cleaner industry over the course of many years to evaluate the performance of vacuum cleaners under consumer-relevant conditions. The Scope of the IEC standard, Part 1.1, states: "This

International Standard is applicable to vacuum cleaners for household use in or under conditions similar to those in households. The purpose of this standard is to specify essential performance characteristics of vacuum cleaners being of interest to the users and to describe methods for measuring these characteristics.”

Part 2.9 – Performance with a Partly Filled Dust Receptacle

11. The intention of the part 2.9 (draft 4.0 edition) procedure “is to provide means to measure the performance of a vacuum cleaner having a dust loaded receptacle.” Only the IEC 60312, part 2.9 procedure is the only consensus standard method for the suction of the vacuum cleaner under dust-loaded conditions. The ASTM does not have a comparable standard for dust-loaded suction.

12. IBR measured air suction of the vacuum cleaner while being loaded with specified dust¹ in accordance with part 2.9, stopping at Condition 1 or Condition 2, whichever was first reached. IBR did not measure air suction stopping at Condition 3. Condition 3 is still under consideration and review by the IEC Committee for Standard 60312.

13. As is my customary practice, I supervised IBR employees David Wright (DW) and Dan Nedry (DN), who performed the IEC 60312, part 2.9 tests on three identical Maytag Legacy and three identical Hoover Fusion upright vacuums that had been purchased on the open market from local vendors. All machines were new when tested.

¹ Test dust used was in accordance with the requirements set forth in part 2.9 of the IEC Standard 60312. IBR prepared the test dust mixture shortly before executing the part 2.9 tests, in accordance with the IEC-mandated recipe called for by that section. While it is possible to obtain ready-made dust mixtures purporting to conform to IEC test standards from overseas commercial suppliers, it has been my experience that the uniformity of the commercially-prepared dust mixtures is affected by a tendency of the dust and fiber particles to aggregate and clump together over time. Thus, it is IBR's standard procedure to mix all test dusts onsite at IBR in strict conformity with IEC procedures, shortly before conducting each vacuum performance test.

14. Following the testing, I reviewed and verified the results and prepared a report dated August 29, 2006 which demonstrates the loss of suction for each machine tested. It is the normal and customary business practice of IBR to prepare reports of this nature following the completion of testing, and copies of these reports are maintained by IBR in the ordinary course of its business. The report is attached as Exhibit 3 to this declaration. This report shows the three different Maytag Legacy and three different Hoover Fusion vacuum test results by serial number (S/N). Graphs of the results from the IEC Part 2.9 test on the Maytag Legacy and Hoover Fusion are attached hereto as Exhibits 4 and 5, respectively.

15. The three Maytag Legacy upright vacuum cleaners IBR tested experienced a loss of suction before the bin fill lines were reached at 1200 grams. The percentage reduction (% loss) of suction on the 50mm orifice for each of the three machines at the point of reaching the bin fill lines was 37.1, 35.9, and 28.2%, respectively. With a statistical confidence of 95%, these three Maytag Legacy cleaners had an average reduction of suction of 33.3% +/-5.5%. A graphical representation of the test results is set forth at Exhibit 4.

16. The three Hoover Fusion upright vacuum cleaners IBR tested experienced a loss of suction before the bin fill lines were reached at 1200 grams. The percentage reduction (% loss) of suction on the 50mm orifice for each of the three machines at the point of reaching the bin fill lines was 37.1, 37.8., and 35.5%, respectively. With a statistical confidence of 95%, these three Hoover Fusion cleaners had an average reduction of suction of 36.8% +/-1.3%. A graphical representation of the test results is set forth at Exhibit 5.

I swear under penalty of perjury that the foregoing is true and correct, and that I executed this declaration on 29 August, 2006 at Grass Lake, Michigan.

A handwritten signature in black ink, appearing to read 'Susan H. Goldsmith', written over a horizontal line.

Susan H. Goldsmith
Managing Director/Director of Technical Services
Inter Basic Resources, Inc.

30190669.4

Susan H Goldsmith

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Education:

B.S. Cellular Biology, University of Michigan, Ann Arbor, 1978

B.S. ChE, University of Michigan, Ann Arbor, 1978

Employment:

1978-1984 Gelman Sciences, Ann Arbor, MI

R&D Technician 1978

Development Engineer, Cartridge R&D, 1978- 1980

Membrane R&D

R&D Supervisor, Cartridge R&D, 1982-84

1984- Present, IBR Grass Lake MI

Co- Founder and Owner

A2LA accredited lab for filter testing. A2LA certificate # 1362.01.

Over 30 technical papers

Active member of ASTM, SAE, IEC, including many technical committees.

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
60312**

Edition 3.2

2004-05

**Edition 3:1998 consolidée par les amendements 1:2000 et 2:2004
Edition 3:1998 consolidated with amendments 1:2000 and 2:2004**

**Aspirateurs de poussière à usage domestique –
Méthodes de mesure de l'aptitude à la fonction**

**Vacuum cleaners for household use –
Methods of measuring the performance**



**Numéro de référence
Reference number
CEI/IEC 60312:1998+A1:2000+A2:2004**

2.8.1 Conditions for measurement

Vacuum cleaners, which in normal operation are equipped with hose and/or connecting tube, shall have such components attached but without nozzle or brush. For upright cleaners with option to be operated with or without a hose, air data shall be obtained for both options and be reported separately.

2.8.2 Test equipment

Either of the alternative test equipment described in 5.2.8 may be used. The test report shall state which of the alternative test equipment has been used to obtain the air data.

2.8.3 Determination of air data

Air flow, vacuum and input power are determined for a number of throttlings sufficient for plotting curves of vacuum and input power against the air flow (see figure 12).

Prior to the sequence of measurements, the vacuum cleaner shall be operated unthrottled in accordance with 1.4.7 to establish a reference value of the exhaust air temperature for further measuring points.

For each measuring point, the air flow, vacuum and input power are recorded 1 min after the throttling. The cleaner is then again operated unthrottled to attain the reference conditions, which is checked by measuring the exhaust air temperature. This procedure is continued until all the entire curves have been plotted with the measuring point for maximum vacuum being the last one.

For each measuring point, the suction power P_2 is obtained as the product of the air flow q and the vacuum h . The efficiency η is calculated as the ratio of corresponding values of the suction power and input power. Curves of suction power and of efficiency are also plotted against the air flow (see figure 12).

2.9 Reduction in maximum air flow with a partly filled dust receptacle

The purpose of this test is to determine the reduction in maximum air flow when an amount of test dust, related to the volume of the dust receptacle, is introduced into the cleaner.

NOTE 1 The maximum usable volume of the dust receptacle (see 2.7) is an indication of the maximum volume which can be used in practice if the natural dirt is of fibrous nature.

NOTE 2 The reduction in maximum air flow with a partly filled dust receptacle is an indication to what extent the volume of the receptacle can be used in practice if the natural dirt is of a clogging nature.

NOTE 3 When expressing the test result for consumers' information, it is preferable to associate the reduction in maximum air flow with the quantity of test dust introduced. Example: 40 % reduction with 250 g of test dust.

2.9.1 Test dust

Mineral dust/wood flour mixture, in accordance with 5.1.2.4, shall be used.

The amount of test dust to be used shall be 50 g/l of the maximum usable volume of the dust receptacle (see 2.7).

2.9.2 Détermination de la réduction du débit d'air maximal

Le débit d'air maximal de l'aspirateur équipé d'un réservoir à poussière propre est déterminé conformément à 2.8. L'aspirateur fonctionnant dans sa position normale, la quantité de poussière d'essai déterminée est introduite dans l'aspirateur et le débit d'air maximal est de nouveau mesuré. L'aspirateur doit rester en fonctionnement durant toute cette procédure.

NOTE Pour les aspirateurs verticaux ne comportant pas de possibilité d'utilisation d'un tuyau en option, la poussière d'essai est introduite par un adaptateur du suceur (voir figure 11) ou un autre dispositif d'approvisionnement approprié.

La réduction du débit d'air maximal, en pourcentage, est calculée à partir de la formule suivante:

$$\text{réduction du débit d'air maximal} = \frac{q_{\max} - q_c}{q_{\max}} \times 100$$

où

q_{\max} est le débit d'air maximal avec le réservoir à poussière propre, en dm³/s;

q_c est le débit d'air maximal avec le réservoir à poussière partiellement rempli, en dm³/s.

Trois mesures doivent être effectuées pour établir une valeur moyenne qui représente la réduction du débit d'air maximal.

2.10 Emission de poussière par l'aspirateur

L'objet de cet essai est de déterminer la concentration moyenne de poussière dans l'air refoulé par l'aspirateur lorsqu'il fonctionne à son débit d'air maximal en étant alimenté de la quantité spécifiée de poussière d'essai. L'essai n'a pas été élaboré pour traiter des aspects médicaux d'allergies.

Avant l'essai, l'aspirateur doit être soumis aux mesures des caractéristiques d'aspiration (voir 2.8) afin d'établir le débit d'air maximal de l'aspirateur.

2.10.1 Equipement d'essai

L'équipement tel qu'il est décrit en 5.2.9 se compose d'une hotte d'essai avec un tube de prélèvement d'échantillons, un distributeur de poussière et un instrument de mesurage (compteur de particules). Le débit d'air auquel le compteur de particules fonctionne doit être connu.

Le diamètre du tube de prélèvement d'échantillons doit être choisi en fonction du débit d'air dans le tuyau de la hotte (déterminé à partir du débit d'air maximal de l'aspirateur) et du débit d'air du compteur de particules, de façon à conserver à peu près une condition isocinétique à l'orifice du tube de prélèvement, c'est-à-dire que la vitesse de l'air dans le tuyau de la hotte soit égale à la vitesse de l'air dans le tube de prélèvement. En alternative, on peut utiliser un tube de prélèvement d'échantillons comportant des buses d'entrée interchangeables et ayant des ouvertures de diamètres différents.

2.10.2 Poussière d'essai

On doit utiliser pour cet essai de la poussière d'essai conforme à 5.1.2.5.

2.9.2 Determination of the reduction in maximum air flow

The maximum air flow of the vacuum cleaner, equipped with a clean dust receptacle, is determined in accordance with 2.8. With the cleaner running in its normal position of operation, the established amount of test dust is introduced into the cleaner and the maximum air flow is then measured again. The vacuum cleaner shall be kept running throughout this procedure.

NOTE: For upright cleaners without provision for optional use of a hose, the test dust is introduced through a nozzle adaptor (see figure 11) or other suitable feeding device.

The reduction in maximum air flow, in per cent, is calculated from the following formula:

$$\text{reduction in maximum air flow} = \frac{q_{\max} - q_c}{q_{\max}} \times 100$$

where

q_{\max} is the maximum air flow with clean dust receptacle, in dm³/s;

q_c is the maximum air flow with partly filled dust receptacle, in dm³/s.

Three separate measurements are carried out to establish a mean value representing the reduction in maximum air flow.

2.10 Dust emission of the vacuum cleaner

The purpose of this test is to determine the average dust concentration in the exhaust air of a vacuum cleaner when operating at its maximum air flow and fed with test dust at a specified rate. The test has not been developed to reflect medical aspects of allergens.

Prior to the test, the vacuum cleaner shall have been subjected to air data measurements (see 2.8) in order to establish the maximum air flow of the cleaner.

2.10.1 Test equipment

The equipment, as described in 5.2.9, comprises a testing hood with a sampling probe tube, a dust dispenser and a dust measuring instrument (particle counter). The air flow at which the particle counter operates shall be known.

The diameter of the sampling probe tube shall be chosen with respect to the air flow in the chimney tube (determined from maximum airflow of the cleaner) and the air flow of the particle counter, in such a way as to maintain an almost isokinetic state at the opening of the probe tube, i.e. air velocity in the chimney tube \approx air velocity in the probe tube. Alternatively, a probe tube with exchangeable inlets of differing hole diameters may be used.

2.10.2 Test dust

Test dust, in accordance with 5.1.2.5, shall be used for this test.

**Test Report Summary**

IBR JN 8561 and 8648 shown in combination

Summary Date: 29 August 2006

Test Dates:

IBR JN 8561 : 12 July 2006

IBR JN 8648: 23 August 2006

Test Method: IEC 60312 sec 2.9 air flow with loaded dust receptacle, per committee draft 4.0

Contaminant: IEC 60312 WG3 mix per sec 5.1.2.3 of 4th draft

Dust	Maytag legacy- IBR JN 8561						Hoover Fusion- IBR JN 8648					
	S/N 0506000010334	S/N 0506000010149	S/N 050600008696	S/N 080500220289	S/N 09050258451	S/N 09050263988	Corrected Suction, kPa	% Loss	Corrected Suction, kPa	% Loss	Corrected Suction, kPa	% Loss
Fed g	Corrected Suction, kPa	% Loss	Corrected Suction, kPa	% Loss	Corrected Suction, kPa	% Loss	Corrected Suction, kPa	% Loss	Corrected Suction, kPa	% Loss	Corrected Suction, kPa	% Loss
0	0.199	0.0%	0.199	0.0%	0.178	0.0%	0.249	0.0%	0.231	0.0%	0.195	0.0%
50	0.199	0.0%	0.199	0.0%	0.178	0.0%	0.249	0.0%	0.234	0.0%	0.195	0.0%
100	0.201	1.3%	0.201	1.3%	0.178	0.0%	0.247	0.0%	0.231	0.0%	0.193	0.0%
150	0.206	3.8%	0.201	1.3%	0.181	1.4%	0.242	0.0%	0.229	0.0%	0.195	0.0%
200	0.211	6.4%	0.204	2.6%	0.178	0.0%	0.237	0.0%	0.226	0.0%	0.198	0.0%
250	0.209	5.1%	0.204	2.6%	0.181	1.4%	0.237	0.0%	0.229	0.0%	0.195	0.0%
300	0.206	3.8%	0.204	2.6%	0.181	1.4%	0.234	0.0%	0.226	0.0%	0.195	0.0%
350	0.204	2.6%	0.201	1.3%	0.181	1.4%	0.234	0.0%	0.224	0.0%	0.193	0.0%
400	0.201	1.3%	0.201	1.3%	0.183	2.9%	0.231	0.0%	0.221	0.0%	0.193	0.0%
450	0.199	0.0%	0.199	0.0%	0.183	2.9%	0.234	0.0%	0.221	0.0%	0.190	0.0%
500	0.199	0.0%	0.194	2.6%	0.178	0.0%	0.231	0.0%	0.221	0.0%	0.193	0.0%
550	0.194	2.6%	0.194	2.6%	0.178	0.0%	0.234	0.0%	0.226	0.0%	0.193	0.0%
600	0.191	3.8%	0.191	3.8%	0.176	1.4%	0.231	0.0%	0.224	0.0%	0.195	0.0%
650	0.191	3.8%	0.191	3.8%	0.176	1.4%	0.231	0.0%	0.221	0.0%	0.195	0.0%
700	0.194	2.6%	0.189	5.1%	0.173	2.9%	0.234	0.0%	0.224	0.0%	0.193	0.0%
750	0.191	3.8%	0.186	6.4%	0.173	2.9%	0.237	0.0%	0.221	0.0%	0.198	0.0%
800	0.189	5.1%	0.186	6.4%	0.173	2.9%	0.231	0.0%	0.216	0.0%	0.195	0.0%
850	0.186	6.4%	0.186	6.4%	0.168	5.7%	0.231	0.0%	0.219	0.0%	0.193	0.0%
900	0.176	11.5%	0.183	7.7%	0.145	18.6%	0.229	0.0%	0.219	0.0%	0.190	0.0%
950	0.166	16.7%	0.178	10.3%	0.138	22.9%	0.231	0.0%	0.216	0.0%	0.190	0.0%
1000	0.158	20.5%	0.173	12.8%	0.130	27.1%	0.234	0.0%	0.219	0.0%	0.193	0.0%
1050	0.150	24.4%	0.163	17.9%	0.122	31.4%	0.231	0.0%	0.208	0.0%	0.188	0.0%
1100	0.143	28.2%	0.155	21.8%	0.117	34.3%	0.221	0.0%	0.188	0.0%	0.170	0.0%
1150	0.135	32.1%	0.148	25.6%	0.115	35.7%	0.201	0.0%	0.167	0.0%	0.157	0.0%
1200	0.127	35.9%	0.143	28.2%	0.112	37.1%	0.157	0.0%	0.144	0.0%	0.126	0.0%

Notice: These data relate only to the samples tested. This report may be copied only in its entirety.

pg 1/1

IBR JN 8648:	Performed By: DN	Data Location: DN40
IBR JN 8561:	Performed By: DW	Data Location: DW160

**Susan Goldsmith**

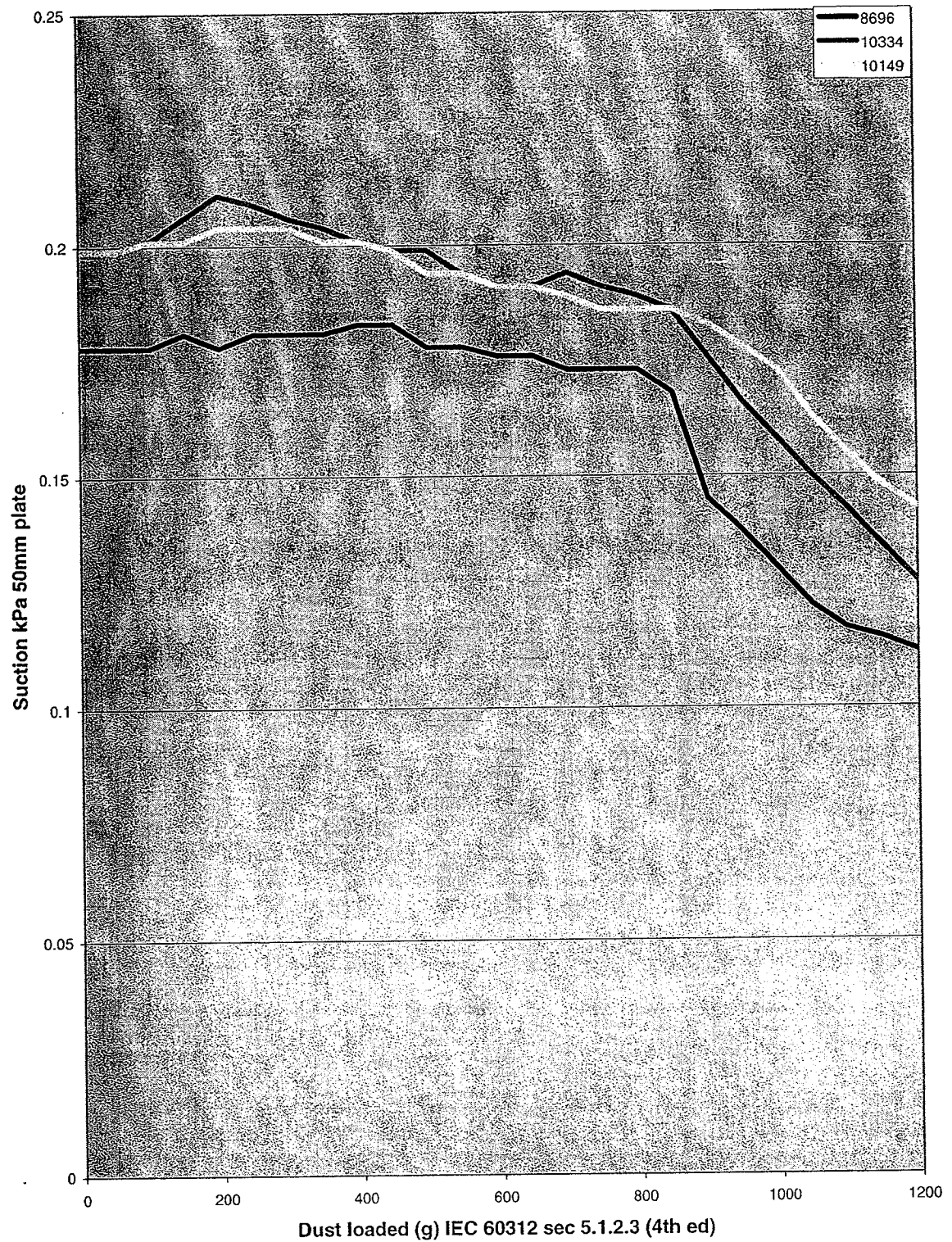
Digitally signed by Susan Goldsmith
 DN: cn=Susan Goldsmith, o=IBR, ou=US
 Date: 2006.08.29 22:02:16 -0400

Reviewed By: Signature valid

Susan H. Goldsmith, Director of Technical Services

IBR 11599 Morrissey Rd Grass Lake MI USA 49240 Voice 517-522-8453 Fax 517-522-3695

Reduction in suction (kPa) with a partly filled dust receptacle
IEC 60312 sec 2.9
x3 Maytag Legacy machines tested at IBR



Reduction in suction (kPa) with a partly filled dust receptacle
IEC 60312 sec 2.9
x3 Hoover Fusion machines tested at IBR

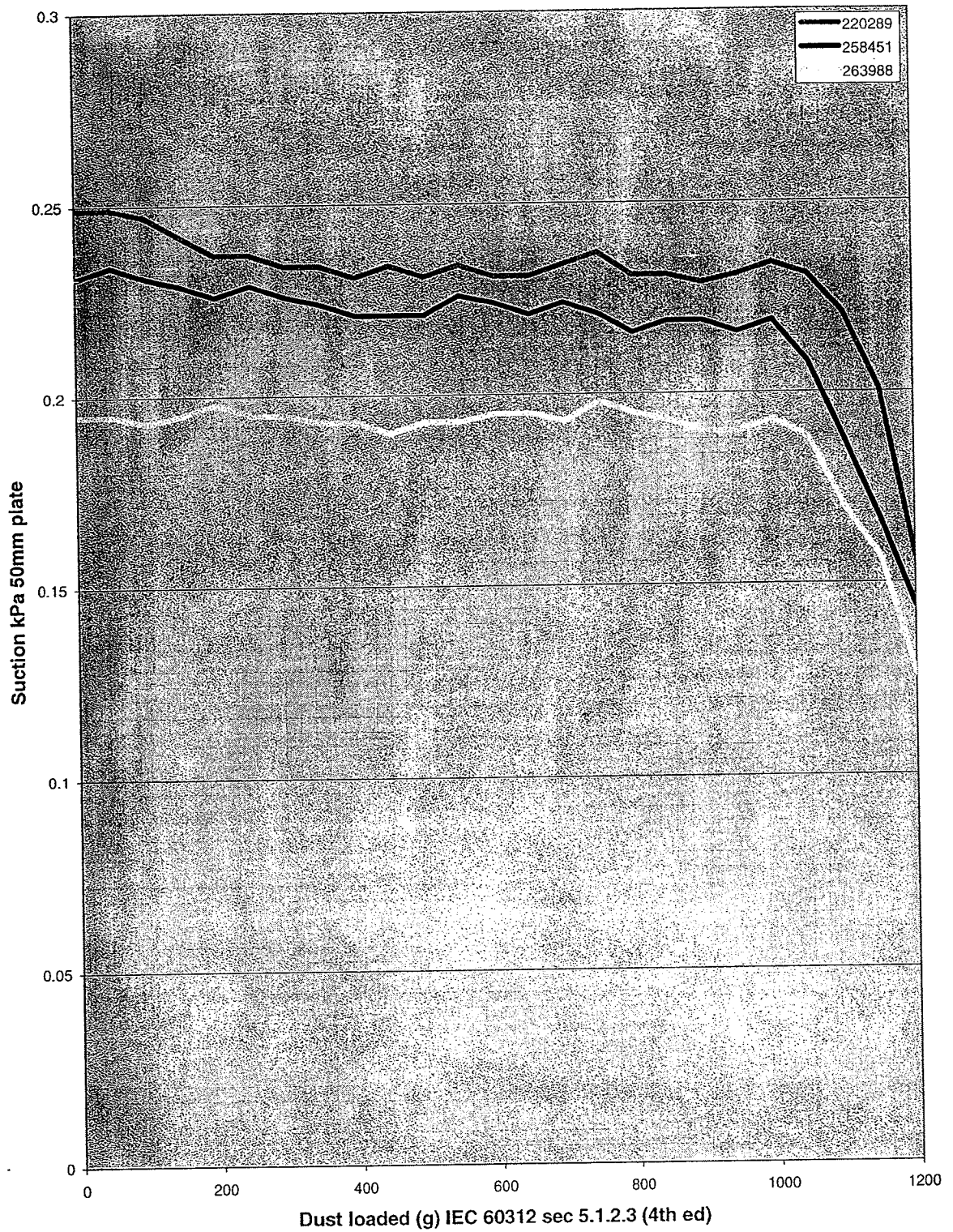


EXHIBIT P

**UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

DYSON, INC.,)	
)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 06-CV-6576(DC)
)	
MAYTAG CORPORATION,)	
)	
Defendant.)	

DECLARATION OF MICHAEL B. MAZIS, PH.D.

I, Michael B. Mazis, Ph.D., do under oath state as follows:

1. I was asked by Manatt, Phelps & Phillips, LLP, counsel for Dyson, Inc., to conduct a survey to assess consumer perception of the disclaimer that was used in conjunction with the "no loss of suction" claim on the box of the Hoover Fusion vacuum cleaner. As a result, I conducted a survey in eight cities among 208 recent or prospective new upright vacuum cleaner purchasers. A summary of my qualifications and the results of my survey follow.

SUMMARY OF QUALIFICATIONS AND EXPERIENCE

Credentials and Expertise

2. I am Professor of Marketing at the Kogod School of Business, American University. I have been a faculty member at American University for over 25 years, and I have served over 10 years as chair of the Department of Marketing. For over a decade, I have taught undergraduate and graduate courses in marketing research. These courses focus on research

methodology, questionnaire development, sampling, and data analysis. I have also taught a graduate course in qualitative marketing research, which focuses primarily on focus group research. In addition, I have taught courses in consumer behavior, principles of marketing, marketing management, and Internet marketing. Attached to this declaration is a current copy of my curriculum vitae, which contains a complete description of my professional background. (See Exhibit A.)

3. I received my B.S. degree in Economics from the University of Pennsylvania, my M.B.A. degree from New York University, and my Ph.D. degree in Business Administration from Pennsylvania State University.

4. From 1976 to 1979, I served as an in-house marketing expert at the Food and Drug Administration ("FDA") and at the Federal Trade Commission ("FTC"), where I evaluated consumer perception of companies' advertising and other promotional materials, designed and conducted consumer research surveys, and evaluated surveys submitted by companies seeking to substantiate advertising claims. I continue to serve as a consultant for the FTC, having served as the FTC's principal marketing witness in *FTC vs. Novartis* in 1997, *FTC vs. Trans Union* in 1998, *FTC vs. Mercury Marketing* in 2003, and *FTC vs. Telebrands* in 2004. I have also served as a consultant on marketing research and consumer behavior for the FDA, Consumer Product Safety Commission, Department of Justice, U. S. Mint, Bureau of Alcohol, Tobacco, and Firearms, and the State of California.

5. I have also worked as a marketing research analyst for the Warner-Lambert Pharmaceutical Company. In this position, I designed marketing research surveys and focus group studies.

6. I am a member of the American Marketing Association and a member and former director of the Association for Consumer Research. I was editor of the *Journal of Public Policy & Marketing* from 1992 to 1995, and I was Associate Editor of *The Journal of Consumer Affairs* from 1998 to 2001.

7. I have published over 60 articles in academic journals and conference

proceedings. My research has been published in the *Journal of Marketing*, *Journal of Consumer Research*, *Journal of Marketing Research*, *Journal of Public Policy & Marketing*, *The Journal of Consumer Affairs*, *Journal of Personality and Social Psychology*, *Journal of Experimental Social Psychology*, and *Journal of the American Medical Association*. In addition, I have spoken on designing consumer perception surveys at conferences sponsored by the American Marketing Association, American Bar Association, and Council of Better Business Bureaus (National Advertising Division).

SUMMARY OF EXPERT OPINION

8. I conducted a survey of 208 recent or prospective new upright vacuum cleaner purchasers. The survey was conducted in eight geographically dispersed U.S. shopping malls, and it was designed to assess consumer recall and comprehension of the disclaimer that was used in conjunction with the "no loss of suction" claim on the Hoover Fusion box. While "no loss of suction" was a prominent claim on the box of the Hoover Fusion vacuum cleaner, the accompanying disclaimer was neither recalled frequently nor comprehended often by consumers. Of the 123 consumers who reported noticing the "no loss of suction" claim, only about one in seven (14.6%) reported noticing the disclaimer. Less than one in twenty consumers (4.1%) who reported noticing the "no loss of suction" claim recalled the key elements of the message conveyed in the disclaimer. Moreover, when consumers were asked specifically to read the disclaimer, comprehension was relatively poor. Most consumers who were asked "what percentage of the dirt cup do you think ten ounces of dirt would fill" replied either that they didn't know (28.8%) or that they believed that 10 ounces of dirt would fill 50% or more of the dirt cup (44.2%). Less than a quarter of respondents (23.6%) believed that 10 ounces of dirt would fill one-third or less of the dirt cup, and 15.8% felt that 10 ounces of dirt would fill 25% or less of the dirt cup.

CONSUMER SURVEY

Research Objectives

9. The survey that I conducted was designed to determine to what extent consumers noticed the disclaimer used in conjunction with the "no loss of suction" claim on the Hoover Fusion box. For those consumers who claimed to have noticed the disclaimer that appeared at the bottom of the Hoover Fusion box, the survey assessed the level of consumer recall of the disclosure message. In addition, the survey reported to what extent consumers comprehended the message conveyed by the disclaimer.

Universe and Sample

10. The universe for the study consisted of recent upright vacuum cleaner purchasers or prospective upright vacuum cleaner purchasers. Interviews were conducted with 208 respondents in eight shopping malls across the U. S. Approximately one-quarter of the interviews were conducted in each of the four U.S. Census regions. These shopping malls were located in the following cities:

Northeast

- New York, NY
- Philadelphia, PA

South

- Atlanta, GA
- Tampa, FL

Midwest

- Milwaukee, WI
- Minneapolis, MN

West

- Los Angeles, CA
- Phoenix, AZ

11. Interviews were conducted August 24-31, 2006. The study was "double blind." Neither the interviewer nor the respondent was aware of the identity of the client or the purpose of the study.

"Screening" Questionnaire

12. Interviewers used a "screening" questionnaire, which consisted of questions to determine whether potential respondents were qualified to participate in the study. (See Exhibit B.) Potential respondents had to have purchased in the past 12 months or had to have planned to purchase in the next 12 months a new upright vacuum cleaner costing \$100 or more. In addition, survey participants had to have decided or helped to have decided (or likely to decide or likely to help to decide) which upright vacuum cleaner to purchase. Potential respondents were excluded from participation if they or members of their households worked for an advertising agency, a public relations firm, a marketing research firm, a manufacturer or distributor of vacuum cleaners, or a store that sells vacuum cleaners. Potential respondents were also excluded if they had participated in a marketing research survey other than a political poll in the past three months. They were also excluded if they wore eyeglasses or contact lenses for reading but did not have their corrective eye wear with them at the time of the interview. Those potential respondents who were qualified to participate in the study based on their responses to the "screening" questionnaire were administered the "main" questionnaire.

"Main" Questionnaire

13. Respondents who qualified for the study were escorted to the interviewing facility maintained by the research organization and were administered the "main" questionnaire. (See Exhibit C.) The same questions were included in all of the questionnaires, but the order of some of the questions was varied to control for potential order bias.

14. At the start of the "main" questionnaire, the interviewer said:

Assume that you are in a store looking for a new upright vacuum cleaner, and you see a product that you might be interested in purchasing. I'm going to show you a box of this upright vacuum cleaner, which you may or may not have seen before. Whether or not you have seen this vacuum cleaner before, please read the information on the box as you would if you considering purchasing this upright vacuum cleaner. Read the information on all four sides of the box. When you are finished, please let me know, and I will have a few questions for you.

15. After the respondent had finished reading the information on the Hoover Fusion box, it was removed from sight. Then, the interviewer said:

Now, I'm going to ask you some questions. There are no right or wrong answers to my questions. If you don't have an opinion or don't know an answer, please just tell me rather than taking a guess.

Then, respondents were asked an open-ended question: "Please tell me all of the information that you can remember reading on the vacuum box." This question was followed by the probe: "What else?" (Q1).

16. The next two questions were:

Do you or don't you recall seeing any information on the box about "no loss of suction"?
Do you or don't you recall seeing any information on the box about "HEPA filtration"?
(Q2a and Q2b)

The order of these two questions was rotated so the one half of the respondents was asked first the question about "no loss of suction" and one half of the respondents was asked first the question about "HEPA filtration." The question about "HEPA filtration" served as a control question (to adjust for guessing), since there was no information on the Hoover Fusion box about HEPA filtration.

17. Then, respondents were asked some questions about their recall of the disclaimer. Respondents were asked: "Do you or don't you recall seeing a footnote with an asterisk at the bottom of the box?" (Q3). Respondents who answered affirmatively were asked: "What did the footnote at the bottom of the box say?" "What else?" (Q3a). Next, respondents were asked

whether they recalled key information in the disclaimer: "Do you or don't you recall any information on the box that referred to '10 ounces of dirt'?"¹ (Q4). Respondents who answered affirmatively were asked: "What did the information on the box say about '10 ounces of dirt'?" "What else?" (Q4a).

18. Finally, respondents were shown the Hoover Fusion box for a second time, and they were asked about their comprehension of the disclaimer. While the box was in front of the respondent, the interviewer said pointing to the disclaimer:

I'd like you to read this information in the footnote. When you are finished, please let me know, and I will have some questions for you about the information.

The information in the footnote states that "suction stays constant for up to 10 ounces of dirt." What does this phrase mean to you? What else? (Q5a).

What percentage of the dirt cup do you think 10 ounces of dirt would fill? (Q5b).

Procedures and Validation

19. Target Research Group, under my supervision, prepared separate instructions for interviewers and their supervisors. (See Exhibit D.) Target Research Group, Inc., founded in 1986, is a full-service marketing research company with headquarters in Nanuet, NY. Before starting work on the study, each interviewer was required to read the interviewer instructions, to attend a personal briefing at which interviewing procedures were discussed in detail, and to complete a practice interview. The trained interviewers administered the questionnaire and recorded each participant's response to each question.

20. Validation was conducted by attempting to re-contact respondents to verify that they had participated in the study and that they were qualified to participate. The names and

¹ The disclaimer stated: "Suction stays constant for up to 10 ounces of dirt, as tested by an independent laboratory using ASTM F558 test method and a dirt composition comprised of 70% mineral dust, 20% cellulose dust and 10% fibrous material.

telephone numbers of all respondents who had provided them were sent to Field Solutions, an interviewing service not affiliated with Target Research Group, to conduct telephone validation. They attempted to validate 100% of the interviews. In conducting the validation telephone calls, a minimum of three attempts were made to re-contact all respondents. Validation is ongoing and has not yet been completed.

Results

21. Respondents were queried about whether they had recalled "seeing any information on the box about "no loss of suction" (Q2a/Q2b). One hundred and twenty-three (123) of the 208 respondents (59.1%) stated that they had recalled seeing the "no loss of suction" claim on the Hoover Fusion box. The remaining respondents answered "no" (36.1%) or "don't know" (4.8%).

22. Respondents were also asked about whether they had recalled "seeing any information on the box about "HEPA filtration" (Q2a/Q2b). This served as the control question to adjust for guessing. Forty-six (46) of the 208 respondents (22.1%) indicated that they had recalled (falsely) seeing "HEPA filtration" on the Hoover Fusion box. The remaining respondents answered "no" (69.7%) or "don't know" (8.2%). Therefore, adjusting for responses to the control question, 37% (59.1% - 22.1%) of respondents surveyed recalled seeing the "no loss of suction" claim on the Hoover Fusion box.

23. Next, respondents were asked whether they recalled "seeing a footnote with an asterisk at the bottom of the box" (Q3). Overall, 23 of 208 respondents (11.1%) indicated that they had seen the disclaimer. In addition, 18 of the 123 respondents (14.6%) who stated that they had seen the "no loss of suction" claim reported that they had seen the disclaimer.

24. Then, respondents who reported seeing the disclaimer were asked to tell the interviewer "What did the footnote at the bottom of the box say?" (Q3a). Recall of the

disclaimer was extremely poor. Only five of the 123 respondents (4.1%) who stated that they had seen the "no loss of suction" claim on the box were able to recall key elements of the disclaimer (something about amount of suction and 10 ounces of dirt).

25. Finally, respondents were shown the Hoover Fusion box for a second time. Interviewers then pointed to the disclaimer and asked respondents "What percentage of the dirt cup do you think 10 ounces of dirt would fill?" (Q5b). Over a quarter (28.8%) of respondents answered that they didn't know. Twenty-three percent (23.1%) mentioned that they felt that 10 ounces of dirt would fill 75% or more of the dirt cup. Over two-fifths (44.2%) indicated that they believed that 10 ounces of dirt would fill 50% or more of the dirt cup. On the other hand, less than a quarter (23.6%) of respondents indicated that they felt that 10 ounces of dirt would fill one-third or less of the dirt cup, and 15.8% of respondents believed that 10 ounces of dirt would fill 25% or less of the dirt cup.

CONCLUSIONS

26. While "no loss of suction" was a prominent claim on the box of the Hoover Fusion vacuum cleaner, the accompanying disclaimer was neither recalled frequently nor comprehended often by consumers. Of those consumers who reported recalling the "no loss of suction" message, only about 15% reported noticing the disclaimer. Even fewer consumers (about 4%) recalled the message conveyed in the disclaimer. Moreover, when consumers were asked to read the disclaimer and were asked to indicate what percentage of the dirt cup they thought ten ounces of dirt would fill, most indicated either that they didn't know (about 29%) or that they estimated that 10 ounces of dirt would fill 50% or more of the dirt cup (about 44%). Less than a quarter of respondents (about 24%) believed that 10 ounces of dirt would fill one-

third or less of the dirt cup, and 15.8% indicated that 10 ounces of dirt would fill 25% or less of the dirt cup.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

Dated: September 6, 2006


Michael B. Mazis, Ph.D.

EXHIBIT A

January 2005

MICHAEL B. MAZIS

WORK ADDRESS

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(202) 885-2691 (FAX)
e-mail address: mmazis@american.edu

EDUCATION

B.S. in Economics, June, 1964
University of Pennsylvania, Wharton School

Master of Business Administration (M.B.A.) June 1966
New York University, Graduate School of Business Administration

Ph.D. in Business Administration, December 1971
The Pennsylvania State University
Major Field: Marketing
Minor Fields: Social Psychology/Quantitative Business Analysis

CURRENT POSITION

Professor of Marketing, August 1981 - present
Chair, Department of Marketing, June 1980 - August 1989; May 1998 - May 1999;
September 2004 - current
Associate Professor of Marketing, September 1979 - August 1981
The American University
Kogod School of Business
Washington, D.C.

PREVIOUS POSITIONS

Chief, Marketing and Consumer Research, July 1977 - August 1979
Office of Policy Planning and Evaluation
Federal Trade Commission
Washington, D.C.

Resident Consultant, February 1977 - July 1977
Division of National Advertising
Bureau of Consumer Protection
Federal Trade Commission
Washington, D.C.

Economist, June 1976 - February 1977
Division of Drug Advertising
Bureau of Drugs
Food and Drug Administration
Rockville, Maryland

Assistant Professor of Marketing, September 1971 - August 1974
Associate Professor of Marketing, September 1974 - June 1976
University of Florida
Gainesville, Florida

Marketing Research Analyst, September 1965 - August 1968
Warner-Lambert Pharmaceutical Company
Morris Plains, New Jersey

EDITORSHIPS

Editor, *Journal of Public Policy & Marketing*, 1992-1995

Michael B. Mazis, ed., *Journal of Public Policy & Marketing*, Vol. 10 (Number 1, 1991),
special conference issue

Associate Editor, *The Journal of Consumer Affairs*, 1998-2001.

Michael B. Mazis, ed., Proceedings of 1982 American Psychological Association Conference,
Division 23 (Consumer Psychology).

Louis Morris, Michael Mazis and Ivan Barofsky, eds., *Product Labeling and Health Risks*,
Banbury Center, Cold Spring Harbor Laboratory, New York, 1980, 328 pages.

GRANTS

Michael B. Mazis, "Evaluating Health Warning Labels for Alcoholic Beverages," National Institute on Alcohol Abuse and Alcoholism, September 1989-September 1992 (\$700,000) and grant supplement, 1990-1992 (\$65,000).

Michael B. Mazis, "Marketing and Public Policy: Issues for the 1990's," American Marketing Association, to fund workshop in Washington, D.C., August 1990 (\$500).

PROFESSIONAL PUBLICATIONS

1. Stephen Miller, Michael B. Mazis and Peter L. Wright, "Perceptual Distortion in the Development of Brand Attitudes: A Cognitive Model," in David L. Sparks (ed.), *Broadening the Concept of Marketing*, American Marketing Association, 1970, p. 119 (abstract).
2. Michael B. Mazis and Robert Green, "Implementing Social Responsibility," *MSU Business Topics*, Vol. 13 (Winter 1971), pp. 68-76 (Reprinted in W. P. Anthony, J.B. Haynes and P. L. Wilkens (eds.) *Social Responsibility of Business*, General Learning Press, 1972 and A.B. Carroll (ed.), *Managing Corporate Social Responsibility* Little, Brown and Company, 1977).
3. Stephen Miller, Michael B. Mazis, and Peter L. Wright, "The Influence of Brand Ambiguity on Brand Attitude Development," *Journal of Marketing Research*, Vol. 8 (November 1971), pp. 447-9.
4. Michael B. Mazis, "Decision-Making Role and Information Processing," *Journal of Marketing Research*, Vol. 9 (November 1972), pp. 447-9.
5. Michael B. Mazis, and Timothy W. Sweeney, "Novelty and Personality with Risk as a Moderating Variable," in Boris W. Becker and Helmut Becker (eds.) *Marketing Education and the Real World*, American Marketing Association, 1972, pp. 406-11.
6. Michael B. Mazis and R. Eugene Klippel, "Variable Modular Testing: A New Method for Increasing Student Motivation and Learning in Large Classes," in Boris W. Becker and Helmut Becker (eds.), *Marketing Education and the Real World*, American Marketing Association, 1972.
7. Michael B. Mazis and Robert B. Settle, "Consumer Reaction to Restriction of Choice Alternatives," in M. Venkatesan (ed.), *Proceedings*, Third Annual Association for Consumer Research Conference, 1972, pp. 417-27.

8. Michael B. Mazis and Marilyn Beutenmuller, "Attitudes Toward Women's Liberation and Perception of Advertisements," in M. Venkatesan (ed.), *Proceedings*, Third Annual Association for Consumer Research Conference, 1972, pp. 428-35.
9. Michael B. Mazis, "Cognitive Tuning and Receptivity to Novel Information," *Journal of Experimental Social Psychology*, Vol. 9 (July 1973), pp. 307-19.
10. Michael B. Mazis, Robert B. Settle and Dennis C. Leslie, "Elimination of Phosphate Detergents and Psychological Reactance," *Journal of Marketing Research*, Vol. 10 (November 1973), pp. 390-5.
11. Michael B. Mazis, Dan M. Smith and Kenneth C. Cosgrove, "The Influence of Personality, Interviewer Race and Respondent Race on Responses to a Racially-Oriented Questionnaire," in Thomas V. Greer (ed.), *Combined Proceedings*, American Marketing Association, 1973, pp. 309-13.
12. Michael B. Mazis and Dan M. Smith, "A Comparison of General and Product Specific Risk Measures in the Prediction of Gasoline Purchases," in Robert L. King (ed.), *Advances in Consumer Proceedings*, American Marketing Assoc., 1973, pp. 309-13.
13. Michael B. Mazis and R. Eugene Klippel, "Instrumentality Theories and Consumer Attitudes: Comparing Alternative Models," in Peter L. Wright (ed.), *Advances in Consumer Research*, Vol. 1, Association for Consumer Research, 1973, pp. 346-7 (abstract).
14. Michael B. Mazis and John Faricy, "Consumer Response to the Meat Boycott," in Ronald C. Curhan (ed.), *Combined Proceedings*, American Marketing Association, 1974, pp. 329-33.
15. Michael B. Mazis, "Anti-Pollution Measures and Psychological Reactance: A Field Experiment," *Journal of Personality and Social Psychology*, Vol. 31 (April 1975), pp. 654-60. (Abstract published in *Psychology Today* and *Human Behavior*; conducted radio interview on Canadian Broadcasting Corporation's "As It Is" concerning the article. Reprinted in *Exploring Social Psychology: The Readings*, Steve L. Ellyson and Amy Halberstadt, editors, McGraw-Hill, 1994.)
16. Michael B. Mazis, Review of David A. Aaker and George S. Day eds., *Consumerism: Search for the Consumer Interest*, *Journal of Marketing*, Vol. 39 (April 1975), p. 113.
17. Michael B. Mazis, Olli T. Ahtola and R. Eugene Klippel, "A Comparison of Four Multi-Attribute Models in the Prediction of Consumer Attitudes," *Journal of Consumer Research*, Vol. 2 (June 1975), pp. 38-52.

18. John Faricy and Michael B. Mazis, "Personality and Consumer Dissatisfaction: A Multivariate Approach," in Edward M. Mazze (ed.), *Combined Proceedings*, American Marketing Association, 1975, pp. 202-5.
19. Dan M. Smith and Michael B. Mazis, "Racial Self-Identification and Self-Concept by Means of Unobtrusive Measures," *The Journal of Social Psychology*, Vol. 98 (1976), pp. 221-8.
20. Michael B. Mazis and Janis Adkinson, "An Experimental Evaluation of a Proposed Corrective Advertising Remedy," *Journal of Marketing Research*, Vol. 13 (May 1976), pp. 178-83 (Reprinted in Richard J. Lutz, editor, *Contemporary Perspectives in Consumer Research*, Kent Publishing Company, 1981).
21. Michael B. Mazis and John H. Faricy, "Teaching the Consumer Behavior Course: A Proper Blend of Theory, Applications and Presentation," for Special Education Issue of *Marketing News* (July 30, 1976).
22. Joel B. Cohen, Olli T. Ahtola, Michael B. Mazis and Lawrence J. Severy, "Extended Expectancy-Value Approach to Contraceptive Alternatives" in *Proceedings of the 84th Annual American Psychological Association Convention*, American Psychological Association, 1976 (abstract).
23. Peter H. Rheinstein and Michael B. Mazis, "Regulation of OTC Advertising: The FDA 'Prescription'," *Journal of the American Pharmaceutical Association*, Vol. 16 (September 1976), pp. 505-6, 524-5.
24. Louis A. Morris, Michael B. Mazis and Evelyn Gordon, "A Survey of the Effects of Oral Contraceptive Patient Information," *Journal of the American Medical Association*, Vol. 238 (December 5, 1977), pp. 2504-8.
25. Michael B. Mazis, Louis A. Morris and Evelyn Gordon, "Patient Recall and Attitudes about Two Forms of Oral Contraceptive Patient Information," *Medical Care*, Vol. 16 (December 1978), pp. 1045-54.
26. Albert Wildt and Michael B. Mazis, "Determinants of Scale Response: Label vs. Position," *Journal of Marketing Research*, Vol. 15 (May 1978), pp. 261-7.
27. Michael B. Mazis and Dennis McNeill, "The Use of Marketing Research in FTC Decision making," Subhash C. Jain (ed.), *Research Frontiers in Marketing: Dialogues and Directions*, American Marketing Association, 1978, pp. 308-11.
28. Michael B. Mazis, "Overview of 'Can and Should the FTC Restrict Advertising to Children's Workshop'," in William L. Wilkie (ed.), *Advances in Consumer Research*, Vol. 6, Association for Consumer Research, 1978, pp. 3-6.

29. Kenneth L. Bernhardt and Michael B. Mazis, "Evaluating Consumer Protection Programs," in Thomas C. Kinnear, et. al. (eds.), *Public Policy Issues in Marketing*, Division of Research, Graduate School of Business Administration, University of Michigan, 1979, pp. 48-62.
30. Michael B. Mazis, "Effects of Information on Product-Related Perceptions," in Jerry C. Olson, ed., *Advances in Consumer Research*, Vol. 8, Ann Arbor, Michigan: Association for Consumer Research, 1980, pp. 538-40.
31. Michael B. Mazis and Louis A. Morris, "Evaluation of the Food and Drug Administration's Patient Package Insert Program," *Proceedings*, 1980 American Psychological Association, Division 23.
32. Michael B. Mazis, "The Future of Consumer Protection Regulation" in Kent B. Monroe, ed., *Advances in Consumer Research*, Vol. 9, Ann Arbor, Michigan: Association for Consumer Research, 1981, pp. 455-7.
33. Kenneth Bernhardt, Thomas Kinnear, Michael Mazis and Bonnie B. Reece, "Impact of Publicity on Corrective Advertising Effects," in Kent B. Monroe, ed., *Advances in Consumer Research*, Vol. 9, Ann Arbor, Michigan: Association of Consumer Research, 1981, pp. 414-15.
34. Michael B. Mazis, "An Overview of Product Labeling and Health Risks," in Louis Morris, Michael Mazis and Ivan Barofsky, eds., *Labeling and Health Risks*, Banbury Center, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, 1980, pp. 1-9.
35. Michael B. Mazis, Richard Staelin, Howard Beales and Steven Salop, "A Framework for Evaluating Consumer Information Regulation," *Journal of Marketing*, Vol. 45 (Winter 1981), pp. 11-21.
36. Howard Beales, Michael B. Mazis, Steven C. Salop and Richard Staelin, "Consumer Search and Public Policy," *Journal of Consumer Research*, Vol. 8, (June 1981), pp. 11-22.
37. Michael B. Mazis and Richard Staelin, "Information Processing Principles for Public Policy Making," *Journal of Public Policy & Marketing*, Vol. 1 (1982), pp. 3-14.
38. Michael B. Mazis, "Effectiveness of Required Information Disclosures to Consumers," in Paul N. Bloom, ed., *Consumerism and Beyond: Research Perspectives on the Future Social Environment*, Cambridge, Mass.: Marketing Science Institute, 1982, pp. 75-8.
39. Michael B. Mazis, Dennis McNeill and Kenneth Bernhardt, "Day-After Recall of Listerine Corrective Commercials," *Journal of Public Policy & Marketing*, Volume 2 (1983), pp. 29-37.

40. William L. Wilkie, Dennis McNeill and Michael Mazis, "Marketing's 'Scarlet Letter': The Theory and Practice of Corrective Advertising," *Journal of Marketing*, Vol. 48 (Spring 1984), pp. 11-31.
41. Michael B. Mazis, "Analysis of Medical Consumer Behavior," in Thomas Kinnear, ed., *Advances in Consumer Research*, Vol. 11, Ann Arbor, Michigan: Association for Consumer Research, 1984, pp. 235-7.
42. Ronald Hill and Michael B. Mazis, "Measuring Emotional Responses to Advertising," in Richard Lutz, ed., *Advances in Consumer Research*, Vol. 13, Association for Consumer Research, 1986, pp. 164-69.
43. Kenneth Bernhardt, Thomas Kinnear, and Michael Mazis, "A Field Study of Corrective Advertising Effectiveness," *Journal of Public Policy & Marketing*, Vol. 5, (1986), pp. 146-62.
44. Michael Mazis, "Overlooked Mechanisms for Conveying Information to Consumers" in E. Scott Maynes, ed. *The Frontier of Research in the Consumer Interest*, Columbia, Missouri: American Council on Consumer Interests, 1988, pp. 225-230.
45. Louis A. Morris, Michael B. Mazis and David Brinberg, "Risk Disclosures in Televised Prescription Drug Advertising to Consumers," *Journal of Public Policy & Marketing*, Vol. 8 (1989), 64-80.
46. Michael B. Mazis, "The Marketing of Alcohol: A Spirited Debate," in William L. Wilkie and Patrick E. Murphy, eds., *The Federal Trade Commission in the 1990's*, University of Notre Dame Press, 1990, 221-233.
47. Michael B. Mazis, "Priority Public Policy Research Needs for the 1990's," in William L. Wilkie and Patrick E. Murphy, eds., *The Federal Trade Commission in the 1990's*, University of Notre Dame Press, 1990, 369-373.
48. Michael B. Mazis, Louis A. Morris and John L. Swasy, "An Evaluation of the Alcohol Warning Label: Initial Survey Results," *Journal of Public Policy & Marketing*, Vol. 10 (Spring 1991), 229-41.
49. Michael B. Mazis, Review of Jef I. Richards, *Deceptive Advertising: Behavioral Study of a Legal Concept*, *Journal of the Academy of Marketing Science*, Vol. 20 (Winter 1992), 99-100.
50. Michael B. Mazis, Debra Jones Ringold, Elgin S. Perry, and Daniel W. Denman, "Perceived Age and Attractiveness of Models in Cigarette Advertisements," *Journal of Marketing*, Vol. 56 (January 1992), 22-37.

51. Louis A. Morris, John L. Swasy, and Michael B. Mazis, "Accepted Risk and Alcohol Use During Pregnancy," *Journal of Consumer Research*, Vol. 21 (June 1994), 135-144.
52. Manoj Hastak, Romana L. Horst, and Michael B. Mazis, "Consumer Perceptions About and Comprehension of Environmental Terms: Evidence From Survey Research Studies" in Debra Jones Ringold, ed., *Proceedings of the Marketing and Public Policy Conference*, Vol. 4, Baltimore, MD, May, 1994, 94-108.
53. Michael B. Mazis, "The Cellular Telephone Cancer Scare," in *When Lightning Strikes: A How-To Crisis Manual with Classic Case Studies*, Wayne L. Pines, ed., Washington, DC: Washington Business Information, Inc., 1994, 279-290.
54. Michael B. Mazis, "Conducting Research on Nontraditional Media in the Marketing of Alcoholic Beverages," Susan Martin, ed., *The Effects of the Mass Media on the Use and Abuse of Alcohol*, Research Monograph No. 28, NIH Publication 95-3743, Washington, DC: U. S. Department of Health and Human Services, 1995, 239-244.
55. Louis A. Morris, Manoj Hastak, and Michael B. Mazis, "Consumer Comprehension of Environmental Advertising and Labeling Claims," *Journal of Consumer Affairs*, Vol. 29 (Winter 1995), 328-350.
56. Gary T. Ford and Michael B. Mazis, "Informing Buyers of Risks: An Analysis of the Marketing and Regulation of All-Terrain Vehicles," *Journal of Consumer Affairs*, Vol. 30 (Summer 1996), 90-123.
57. Michael B. Mazis, "Copy-Testing Issues in FTC Advertising Cases," in Ronald Paul Hill and Charles R. Taylor, eds., *Proceedings of the Marketing and Public Policy Conference*, Vol. 6, Chicago, IL: American Marketing Association, 1996, 122-130.
58. Michael B. Mazis, Louis A. Morris and John L. Swasy, "Longitudinal Study of Awareness, Recall, and Acceptance of Alcohol Warning Labels," *Applied Behavioral Science Review*, 4 (1996, Number 2), 111-120.
59. Michael B. Mazis and Mary Anne Raymond, "Consumer Perceptions of Health Claims in Advertisements and on Food Labels," *Journal of Consumer Affairs*, Vol. 31 (Summer 1997), 10-26.
60. Michael B. Mazis, "Marketing and Public Policy: Prospects for the Future," *Journal of Public Policy & Marketing*, Vol. 16 (Spring 1997), 139-143.
61. Michael B. Mazis and Louis A. Morris, "The Channel," in Michael S. Wolgalter, John W. Brelsford, David M. DeJoy, and Kenneth R. Laughery, eds., *Warnings and Risk Communication*, London, England: Taylor & Francis, 1999, pp. 99-122.

62. Michael B. Mazis, "FTC v. Novartis: The Return of Corrective Advertising?," *Journal of Public Policy & Marketing*, Vol. 20 (Spring, 2001), 114-122.
63. Manoj Hastak, Michael B. Mazis, and Louis A. Morris, "The Role of Consumer Surveys in Public Policy Decision Making," *Journal of Public Policy & Marketing*, Vol. 20 (Fall 2001), 170-185. (Recipient of Thomas C. Kinnear/*Journal of Public Policy & Marketing* Outstanding Article Award presented by American Marketing Association for articles published 1999-2001.)

PROFESSIONAL ACTIVITIES

Editorial Review Board, *Journal of Public Policy & Marketing*, 1982-present.
Editorial Review Board, *The Journal of Consumer Affairs*, 1998-present.
Editorial Review Board, *Journal of Current Issues & Research in Advertising*,
2002-present
Editorial Review Board, *Journal of Marketing*, 1991-1996.

Board of Directors, Association for Consumer Research (ACR), 1979-81.

Leadership Board, "Marketing and Society," American Marketing Association (AMA)
Special Interest Group, 2003-present.

Manuscript reviewer for AMA Educator's Conferences, 1976-2004; ACR Conference, 1978-1996; Marketing and Public Policy Conference, 1992-2004; Academy of Marketing Science Conference, 1994; American Academy of Advertising Conference, 1994; ACCI Conference, 2004; *Journal of Consumer Research*, 1980, 1985-1990, 2000; *Decision Sciences*, 1977 and 1980; *Journal of Marketing*, 1981, 1987, 1990-1991, 1999, 2001-2004; *Journal of Advertising*, 2002 and 2004; *Journal of Marketing Research*, 1985-1987, 1992; *Journal of Consumer Affairs*, 1989, 1991-1992, 1995, 1997; *Psychology and Marketing*, 1990 and 1997; *Journal of Business Research*, 1991; *Journal of the Academy of Marketing Science*, 1991; *International Journal of Research in Marketing*, 1992; *Safety Science*, 1992; *Alcoholism: Clinical and Experimental Research*, 1994; *Journal of Business Ethics*, 1997; *American Business Law Journal*, 1998, .

Conference Co-chair, Marketing and Public Policy Conference, Washington, DC, 2003.

Conference Director, AMA Workshop, "Marketing and Public Policy: Issues for the 1990's," Washington, D.C., August 1990.

Proposal reviewer for the National Science Foundation, 1978. Discussant at AMA Educators' Conference, 1976 and ACR Conference, 1979, 1981, and 1983. Session Chair, AMA Educators' Conference, 1981 and 1988. Discussant at International Conference on Research in the Consumer Interest, 1987 and at American Psychological Association Conference, 1986.

Invited lecturer at University of Kentucky, University of South Carolina, Duke University, University of Maryland, George Washington University, Penn State University, Georgetown University, and Queen's University.

Presented papers at AMA Educators' Conference, 1970, 1975, 1978, 1988, 1992, and 1994; ACR Conference, 1972-1973, 1977, 1979-1980, 1983, 1985, 1992, and 1994; Marketing and Public Policy Conference, 1990, 1992-2003; American Public Health Association Conference, 1991; Southern Marketing Association Conference, 1972 and 1973; American Psychological Association Conference, 1976 and 1980; Academy of

Marketing Science Conference, 1992; AMA Doctoral Consortium, 1992 and 1993; AMA Faculty Consortium on Ethics and Social Responsibility, 1995; AMA mini-conference on Environmental Issues, 1996; AMA mini-conference on Teaching of Public Policy, 1997.

Presented papers at American Assembly of Collegiate Schools of Business, 1979; Association of National Advertisers' Annual Meeting, 1979; J.C. Penney Consumer Affairs Forum, 1979; American Marketing Association (Washington Chapter), 1979; U.S. Regulatory Council's Innovative Techniques Workshop, 1980; MSI Conference: "Consumerism and Beyond: Research Perspectives on the Future Social Environment," 1982; American Advertising Federation Spring Government Affairs Conference, 1989; "The Federal Trade Commission in the 1990's," University of Notre Dame, 1989; Federal Trade Commission Marketing Symposium, 1991 and 1992; Drug Information Association, 1992; American Bar Association Conference: "How to Launch or Defend Against Competitive Challenges to Advertising Claims," 1995; National Advertising Division Workshop on Consumer Perception Communications Surveys, Council of Better Business Bureaus, 1996.

Organized special sessions at ACR Conference on children's advertising regulation, 1978, and on corrective advertising, 1980. Organized pre-conference workshop "Current Developments at the FTC and FDA" for 2000 Marketing and Public Policy Conference. Organized panel on disclosure research at FTC/NAD Conference "Disclosure Exposure," 2001.

Participated in writing, "Review of the Research Literature on the Effects of Health Warning Labels: A Report to the United States Congress," June 1987.

Wrote "The Effects of the FTC's Listerine Corrective Advertising Order" for Federal Trade Commission, 1981; "An Analysis of Homeowner Experiences with Ward-Corporation-Built Homes" for Federal Trade Commission, 1983; "An Analysis of All-Terrain Vehicle Advertising 1980-87" for Consumer Product Safety Commission, 1988; and "Summary and Analysis of Consumer Surveys on Environmental Claims in Advertising and Labeling" for Federal Trade Commission, 1992 (with Manoj Hastak and Romana Horst); "Consumers' Interpretation of Alternative Environmental Claims" for Federal Trade Commission, 1996 (with Manoj Hastak and Thomas J. Maronick).

Member of Advertising and Marketing Panel of the Surgeon General's workshop on Drunk Driving, 1989; Member of Working Group on the Effects of the Mass Media on the Use and Abuse of Alcohol, 1992.

CONSULTANCIES

Served as the FTC's principal marketing witness in *FTC vs. Novartis* in 1997, *FTC vs. Trans Union* in 1998, *FTC v. Mercury Marketing*, 2003, and *FTC v. Telebrands*, 2004. Served also as a consultant on marketing issues for Federal Trade Commission, Food and Drug Administration, Department of Justice, Consumer Product Safety Commission, and the State of California.

HONORS

The American University Award as Outstanding Faculty Administrator (1985) and for Academic Program Development (1984)
Nominated for Teacher-Scholar Award (1983, 1985, 1989, and 1993)
Kogod College Award for Scholarship (1991)
Beta Gamma Sigma and Phi Kappa Phi
AACSB Federal Faculty Fellow, 1976-77

COURSES TAUGHT

Undergraduate: Consumer Behavior, Advanced Consumer Behavior, Marketing Research, and Principles of Marketing.

Graduate: Consumer Behavior, Marketing Research, Marketing Management, Doctoral Seminar in Consumer Research, Marketing and Public Policy, and Internet Marketing.

UNIVERSITY SERVICE

Elected to University Senate, 1980-1986, 1994-95.

University Senate Vice Chair, 1982-83, Parliamentarian, 1981-82, Nominating Committee, 1982-83, Executive Committee, 1981-83, Chair, Summer Sessions Committee, 1984-85, Secretary, The American University Club, 1988-89, Finance Committee, 1991-93.

AU 85 Committee on Faculty Utilization and Development, 1981-82
AU 100 Ad Hoc Committee, 1987; AU Smoking Task Force, 1988-92

Kogod College of Business Administration Faculty Evaluation Committee, 1979-80, Strategic Planning Committee, 1984-85, Chair, M.B.A. Committee, 1984-85, Rank and Tenure Committee, 1989-91 (chair), 2001-2004, Chair, Educational Policy Committee, 1991, MBA Task Force, 1991-1992 (chair) and 1994-96, Research Committee, 1993, 1996-98 (chair), MBA Oversight Committee, 1994-95, Member, Graduate Educational Policy Committee, 1996-1997, Member, Dean Search Committee, 1995-1996, Member, MBA Admissions Committee, 1995-98, Member, Search Committee for IT Center Director, 2001, Dean's Committee on Communication, 2001-2002.

Developed "Marketing Week," 1981-1983.

Developed "Marketing Career Extravaganza," a networking event for students at five Washington, DC area universities, 2001.

EXHIBIT B

TARGET RESEARCH GROUP INC.

PROJECT #113-06145

515 Airport Executive Park
Nanuet, NY 10954

August, 2006

	<u>HOUSEHOLD PRODUCTS STUDY</u> - SCREENER -	RESPONDENT ID# (Card 1; 1-6)
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EDITED BY: _____	FIELD SERVICE: _____	VALIDATED BY: _____
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7-8/2

<u>CITY:</u> <div style="text-align: right;">(9,10,11)</div> Atlanta (AG) 106 Los Angeles (MP) 090 Milwaukee (WI) 034 Minneapolis (MA) 072 New York (NY) 003 Philadelphia (PH) 002 Phoenix (AZ) 012 Tampa (CP) 050	<u>AGE/GENDER:</u> <div style="text-align: right;">(12)</div> <u>Males</u> 18 - 44 1 45 + 2 <u>Females</u> 18 - 44 3 45 + 4
---	--

SIGHT SCREEN FOR MALES/FEMALES 18 YEARS OF AGE OR OLDER

Hello, I'm _____ from Target Research Group, a nationwide market research organization. We're conducting a survey and I'd like to ask you a few brief questions. Let me assure you we are doing this for research purposes only and are not selling anything. We are only interested in your opinions which will be held in the strictest confidence.

NOTE: DO NOT CONTINUE INTERVIEW IF RESPONDENT HAS A HEARING, LANGUAGE OR OBVIOUS VISUAL PROBLEM.

A. (DO NOT ASK:) Record Gender

(13)

Male 1
Female 2

B. Please tell me which of the following groups includes your age? (READ LIST)

(14)

Under 18 1 → (TERMINATE, ERASE & RE-USE SCREENER)
18 - 44 2
45 or over 3

CHECK AGE QUOTAS. IF NEEDED, CONTINUE. IF OVER QUOTA, TERMINATE. CIRCLE BELOW, ERASE & RE-USE SCREENER.

(DO NOT READ) → Refused 4 → (TERMINATE, ERASE & RE-USE SCREENER.)

Q.B: Under 18/Refused											(15)
1	2	3	4	5	6	7	8	9	10		(16)
11	12	13	14	15	16	17	18	19	20		
Q.B: Over Quota 18-44											(17)
1	2	3	4	5	6	7	8	9	10		(18)
11	12	13	14	15	16	17	18	19	20		
Q.B: Over Quota 45+											(19)
1	2	3	4	5	6	7	8	9	10		(20)
11	12	13	14	15	16	17	18	19	20		



- C. Which, if any, of the following products have you purchased in the past 12 months? (READ LIST)

	YES	NO	DON'T KNOW	
A new computer	1	2	3	(21)
A new TV set	1	2	3	(22)
A new <u>upright</u> vacuum cleaner	1	2	3	(23)

IF "YES" TO "NEW UPRIGHT VACUUM CLEANER," CONTINUE WITH Q.D.
IF "NO" OR "DON'T KNOW" TO "NEW UPRIGHT VACUUM CLEANER," SKIP TO Q.F.

- D. About what was the price of the new upright vacuum cleaner that you purchased in the past 12 months – excluding any coupons, gift cards, or other discounts that you may have received? Was it less than \$100 or was it \$100 or more?

(24)

Less than \$100 1 →(SKIP TO Q.F)
\$100 or more..... 2 →(CONTINUE WITH Q.E)
Don't know/No opinion 3 →(SKIP TO Q.F)

- E. And what best describes your role in the purchase of the new upright vacuum cleaner? Would you say ... (READ LIST)

(25)

You decided or helped to decide which upright vacuum cleaner brand was purchased 1 →(SKIP TO Q.H)

Or someone else decided which upright vacuum cleaner brand was purchased..... 2 →(CONTINUE WITH Q.F)

(DO NOT READ) Don't know/No opinion..... 3 →(CONTINUE WITH Q.F)

- F. Are you likely to purchase a new upright vacuum cleaner that costs \$100 or more in the next 12 months?

(26)

Yes..... 1 →(CONTINUE WITH Q.G)
No 2 →(TERMINATE. CIRCLE BELOW,
ERASE AND RE-USE SCREENER)
Don't know/No opinion 3 →(TERMINATE. CIRCLE BELOW,
ERASE AND RE-USE SCREENER)

Q.F: Not likely to purchase upright vacuum in next 12 mos./ Don't Know/No opinion										
1	2	3	4	5	6	7	8	9	10	(27)
11	12	13	14	15	16	17	18	19	20	(28)

- G. And what best describes what is likely to be your role in the purchase of the new upright vacuum cleaner? Would you say ... (READ LIST)

(29)

You are likely to decide or help to decide which upright vacuum cleaner brand to purchase 1 →(CONTINUE WITH Q.H)

Or someone else is likely to decide which upright vacuum cleaner brand to purchase..... 2 →(TERMINATE. CIRCLE BELOW,
ERASE AND RE-USE SCREENER)

Don't know/No opinion..... 3 →(TERMINATE. CIRCLE BELOW,
ERASE AND RE-USE SCREENER)

Q.G: Someone else likely to decide which upright vacuum to purchase/Don't Know/No opinion										
1	2	3	4	5	6	7	8	9	10	(30)
11	12	13	14	15	16	17	18	19	20	(31)



H. Do you or does any member of your household work in any of the following? (READ LIST.)

	<u>Yes</u> (32)	<u>No</u> (33)	<u>DK/ Refused</u> (34)
An advertising agency.....	1	1	1
A public relations firm.....	2	2	2
A marketing research firm.....	3	3	3
A manufacturer or distributor of vacuum cleaners.....	4	4	4
A store that sells vacuum cleaners.....	5	5	5

IF "YES" TO ANY, TERMINATE, CIRCLE BELOW.
ERASE AND REUSE SCREENER.

Q.H: Security Screen										(35)
1	2	3	4	5	6	7	8	9	10	
11	12	13	14	15	16	17	18	19	20	(36)

I. Have you participated in any marketing research survey other than a political poll during the past 3 months?

Yes⁽³⁷⁾ 1 → (TERMINATE, CIRCLE BELOW. ERASE AND RE-USE SCREENER.)
 No 2 → (CONTINUE)
 Don't Know 3 → (TERMINATE, CIRCLE BELOW. ERASE AND RE-USE SCREENER.)

Q.I: Past Participation/Don't Know										(38)
1	2	3	4	5	6	7	8	9	10	
11	12	13	14	15	16	17	18	19	20	(39)

J. Do you usually wear eyeglasses or contact lenses when you read?

Yes⁽⁴⁰⁾ 1 → (ASK Q.K)
 No 2 → (SKIP TO Q.L)

K. Are you wearing your contact lenses or do you have your glasses with you today?

Yes⁽⁴¹⁾ 1 → (CONTINUE)
 No 2 → (TERMINATE, ERASE AND RE-USE SCREENER)

Q.K: Don't Have Glasses or Contact Lenses with Them										(42)
1	2	3	4	5	6	7	8	9	10	
11	12	13	14	15	16	17	18	19	20	(43)

L. I've asked you these questions to see if you are eligible for a very brief interview. Since I have something to show you, I'd like you to come with me into the interviewing facility. It will only take a few minutes of your time and we think you will find it interesting. For your time, we will give you \$2 upon completing the survey. Are you willing to be interviewed? (IF RESPONDENT REFUSES, TERMINATE, ERASE AND RE-USE SCREENER.)

Yes⁽⁴⁴⁾ 1 → (CONTINUE)
 No 2 → (TERMINATE, ERASE AND RE-USE SCREENER)

Q.L: Qualified Refusal										(45)
1	2	3	4	5	6	7	8	9	10	
11	12	13	14	15	16	17	18	19	20	(46)

47-79/Z: 80-1

- CIRCLE AGE/GENDER GROUP ON FRONT PAGE
- CIRCLE CITY ON FRONT PAGE
- ESCORT RESPONDENT TO INTERVIEWING AREA
- STAPLE COMPLETED SCREENER TO TOP OF COMPLETED MAIN QUESTIONNAIRE



TARGET

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113-06145 Screener.doc

EXHIBIT C

Target Research Group, Inc.
515 Airport Executive Park
Nanuet, NY 10954

Project #113-06145
August, 2006

FOR OFFICE USE ONLY	HOUSEHOLD PRODUCTS STUDY - MAIN QUESTIONNAIRE - - YELLOW -	RESPONDENT ID#: (Card 2; 1-6)
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7-1

BEFORE ENTERING ROOM, BE SURE VACUUM CLEANER BOX IS OUT OF SIGHT.

SAY: Please have a seat and make yourself comfortable.

REFER TO SCREENER Q.J. IF RESPONDENT USUALLY WEARS "EYEGLASSES" THEN SAY:
If you usually wear eyeglasses when reading, please put them on now.

IF RESPONDENT DOES NOT HAVE GLASSES, THANK AND TERMINATE. RECORD BELOW.

NO GLASSES:	1	2	3	4	5	6	7	8	9	(8)
-------------	---	---	---	---	---	---	---	---	---	-----

Assume that you are in a store looking for a new upright vacuum cleaner, and you see a product that you might be interested in purchasing. I'm going to show you a box of this upright vacuum cleaner, which you may or may not have seen before. Whether or not you have seen this vacuum cleaner before, please read the information on the box as you would if you were considering purchasing this upright vacuum cleaner. Read the information on all four sides of the box. When you are finished, please let me know, and I will have a few questions for you.

- PLACE VACUUM CLEANER BOX ON TABLE WITH THE FRONT FACING THE RESPONDENT.
- WHEN RESPONDENT IS FINISHED LOOKING AT THE BOX, PLEASE REMOVE BOX FROM SIGHT.

Now, I'm going to ask you some questions. There are no right or wrong answers to my questions. If you don't have an opinion or don't know an answer, please just tell me rather than taking a guess.

1. Please tell me all of the information that you can remember reading on the vacuum cleaner box.
(PROBE:) What else? (RECORD VERBATIM. PROBE UNTIL UNPRODUCTIVE.)

	(9,10)
	(11,12)
	(13,14)
	(15,16)
	(17,18)

- 2a. Do you or don't you recall seeing any information on the box about "HEPA filtration"?

	(19)
Yes, I do.....	1
No, I don't.....	2
Don't know/No opinion.....	3

- 2b. Do you or don't you recall seeing any information on the box about "no loss of suction"?

	(20)
Yes, I do.....	1
No, I don't.....	2
Don't know/No opinion.....	3



TARGET

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3. Do you or don't you recall seeing a footnote with an asterisk at the bottom of the box?

(21)

Yes, I do.....1 →(CONTINUE WITH Q.3a)
No, I don't.....2 →(SKIP TO Q.4)
Don't know/No opinion.....3 →(SKIP TO Q.4)

- 3a. What did the footnote at the bottom of the box say? (PROBE:) What else? (RECORD VERBATIM. PROBE UNTIL UNPRODUCTIVE.)

(22,23)

(24,25)

(26,27)

(28,29)

(30,31)

4. Do you or don't you recall information on the box that referred to "10 ounces of dirt"?

(32)

Yes, I do.....1 →(CONTINUE WITH Q.4a)
No, I don't.....2 →(SKIP TO Q.5)
Don't know/No opinion.....3 →(SKIP TO Q.5)

- 4a. What did the information on the box say about "10 ounces of dirt"? (PROBE:) What else? (RECORD VERBATIM. PROBE UNTIL UNPRODUCTIVE.)

(33,34)

(35,36)

(37,38)

(39,40)

(41,42)

5. Here is the vacuum cleaner box that you just looked at.

SHOW VACUUM CLEANER BOX AGAIN WITH THE FRONT FACING THE RESPONDENT.

I'd like you to read this information in the footnote. (POINT TO THE FOOTNOTE WITH AN ASTERISK (*) AT THE BOTTOM LEFT CORNER OF THE FRONT OF THE BOX)

When you are finished, please let me know, and I will have some questions for you about the information.

KEEP VACUUM CLEANER BOX IN FRONT OF RESPONDENT.

- 5a. The information in the footnote states that "suction stays constant for up to 10 ounces of dirt." (POINT TO THE FOOTNOTE AGAIN WITH THE ASTERISK (*) AT THE BOTTOM LEFT CORNER OF THE FRONT OF THE BOX)

What does this phrase mean to you? (PROBE:) What else? (RECORD VERBATIM. PROBE UNTIL UNPRODUCTIVE.)

(43,44)

(45,46)

(47,48)

(49,50)

(51,52)



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5b. What percentage of the dirt cup do you think ten ounces of dirt would fill? (RECORD VERBATIM)

_____ (53-55)

Don't know.....X

- RESPONDENT AND INTERVIEWER MUST BOTH SIGN AND COMPLETE THE CERTIFICATION.
- COMPLETE RESPONDENT INFO ON NEXT PAGE.



6. Thank you very much. Would you please sign this Certification Page so that I can prove to my supervisor that I interviewed you?

RESPONDENT CERTIFICATION

I certify that I was shown a vacuum box and was asked some questions about it.

Respondent's Signature

Date

INTERVIEWER CERTIFICATION

I certify that I carried out this interview in accordance with my interviewer instructions.

INTERVIEWER'S FULL NAME (PRINT): _____

Interviewer's Signature

Date

IF RESPONDENT REFUSES NAME OR PHONE NUMBER, PLEASE HAVE SUPERVISOR
SIGN BELOW AS ON-SITE VALIDATED.

Supervisor's Signature

Date

Respondent's Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone Number: (____) _____ - _____

56-79/Z; 80-2



EXHIBIT D



Study #06145
Household Products Study
August, 2006

INTERVIEWERS INSTRUCTIONS

OVERVIEW

This is a central location study to be conducted in a permanent enclosed mall facility.

You will be sight screening for males and females on the mall who are 18 years of age or older and have purchased in the past 12 months or intend to purchase in the next 12 months an upright vacuum cleaner that cost at least \$100. Qualified respondents will be escorted back to the interviewing facility and be shown a vacuum cleaner box and asked a series of questions.

This is a one cell test. Everyone sees the same vacuum cleaner box.

STUDY MATERIALS

- Screeners (White)
- Main Questionnaires (Yellow)
- Practice Interviews (Pink)
- 1 Vacuum Cleaner Box

Quota/Assignment

Your supervisor will assign your quota

SCREENER/ELIGIBILITY

Eligible respondents are males and females who are 18 years of age or more:

- QA/B:** Respondent's age/gender is needed to complete a quota
QC: Has purchased a new upright vacuum cleaner in the past 12 months.
QD: The new upright vacuum cleaner cost \$100 or more
QE: Decided or helped decide which upright vacuum cleaner to purchase
QF: Is likely to purchase a new upright vacuum cleaner in the next 12 months that costs \$100 or more.
QG: The respondent will decide or help decide which upright vacuum cleaner to purchase
QH: Does not work or have anyone living in their household work in an advertising agency, a public relations firm, a marketing research firm, a manufacturer or distributor of vacuum cleaners or in a store that sells vacuum cleaners.
QI: Has not participated in a survey in the past 3 months
QJ/K: Has glasses or contact lenses with them if needed.
QL: Respondent agrees to be interviewed
-

MAIN QUESTIONNAIRE

There are 2 rotations of Qs. 2a and 2b that have been interleaved. Complete the questionnaires in the order you received them in. Continue interviewing until all 26 are completed.

MAIN QUESTIONNAIRES

Before the interview begins:

- Be sure the vacuum cleaner box is out of sight.
- Escort the respondent into the interviewing room and close the door.
- Respondent should be standing facing the table.
- If respondent indicated that he/she wears glasses or contact lenses for reading, be sure that he/she is wearing them.
- Only the respondent and the interviewer are to be in the interviewing room.
- When indicated, show the box by placing it on the table with the "front" of the box facing the respondent. A white sticker that says "Front" has been placed on the top right corner of the front of the box.
- When indicated, point to the footnote at the bottom left corner of the "front" of the box where there is a paragraph with one asterisk (*).

The paragraph reads as follows:

***Suction stays constant for up to 10 ounces of dirt, as tested by an independent laboratory using ASTM F558 test method and a dirt composition comprised of 70% mineral dust, 20% cellulose dust and fibrous material.**

MAIN QUESTIONNAIRE IN DETAIL

Read introduction.

**Put the box on the table with the "front" of the box facing the respondent.
When the respondent is finished examining the box, remove the box from sight and continue.**

Q. 1: Read question. Record verbatim. Probe until unproductive.

Q. 2a/b: Record answers.

Q. 3: Record answer. Follow skip pattern.

Q. 3a: Ask if "yes" to Q. 3. Record answer verbatim. Probe until unproductive.

Q. 4: Record answer. Follow skip pattern.

Q. 4a: Ask if "yes" to Q. 4. Record answer verbatim. Probe until unproductive.

Q. 5: Show box again with the front facing the respondent. Point to the footnote, that is, the first paragraph with the asterisk (*) at the bottom left corner of the front of the box.

Q. 5a: Point to the words "suction stays constant for up to 10 ounces of dirt" in the paragraph.
Record response verbatim. Probe until unproductive.

Q. 5b: Record response verbatim.

Respondent/Interviewer Certification Boxes

Both the respondent and the interviewer must sign in the appropriate Certification box on the last page of the questionnaire. If the respondent refuses to sign, his/her initials are acceptable.



Study #06145
Household Products Study
August, 2006

SUPERVISOR INSTRUCTIONS

OVERVIEW

This is a central location study to be conducted in a permanent enclosed mall facility.

You will be sight screening for males and females on the mall who are 18 years of age or older and have purchased in the past 12 months or intend to purchase in the next 12 months an upright vacuum cleaner that cost at least \$100. Qualified respondents will be escorted back to the interviewing facility and be shown a vacuum cleaner box and asked a series of questions.

This is a one cell test. Everyone sees the same vacuum cleaner box.

STUDY MATERIALS

- Screeners (White)
- Main Questionnaires (Yellow)
- Practice Interviews (Pink)
- 1 Vacuum Cleaner Box
- Supervisor Instructions
- Interviewer Instructions
- Master Quota sheet
- Security Procedures
- Respondent Number Worksheet
- Study/Shipping Schedule
- Shipping Instructions
- Validation Forms
- Daily Report Forms
- Audio Tape (You supply)—to tape the Briefing

Quota/Assignment

You are to complete a total of 26 interviews as detailed on your Master Quota sheets. See your Master quota sheet for specific gender and age breaks.

- Males 18-44
 - Males 45+
 - Females 18-44
 - Females 45+
-

SCREENER/ELIGIBILITY

Eligible respondents are males and females who are 18 years of age or more:

- QA/B: Respondent's age/gender is needed to complete a quota
QC: Has purchased a new upright vacuum cleaner in the past 12 months.
QD: The new upright vacuum cleaner cost \$100 or more
QE: Decided or helped decide which upright vacuum cleaner to purchase
QF: Is likely to purchase a new upright vacuum cleaner in the next 12 months that costs \$100 or more.
QG: The respondent will decide or help decide which upright vacuum cleaner to purchase
QH: Does not work or have anyone living in their household work in an advertising agency, a public relations firm, a marketing research firm, a manufacturer or distributor of vacuum cleaners or in a store that sells vacuum cleaners.
QI: Has not participated in a survey in the past 3 months
QJ/K: Has glasses or contact lenses with them if needed.
QL: Respondent agrees to be interviewed

MAIN QUESTIONNAIRE

You have received a supply of 26 main questionnaires. There are 2 rotations of Qs. 2a and 2b that have been interleaved. Complete the questionnaires in the order you received them in. Continue interviewing until all 26 are completed.

Before the interview begins:

- o Be sure the vacuum cleaner box is out of sight.
- o Escort the respondent into the interviewing room and close the door.
- o Respondent should be standing facing the table.
- o If respondent indicated that he/she wears glasses or contact lenses for reading, be sure that he/she is wearing them.
- o Only the respondent and the interviewer are to be in the interviewing room.
- o When indicated, show the box by placing it on the table with the "front" of the box facing the respondent. A white sticker that says "Front" has been placed on the top right corner of the front of the box.
- o When indicated, point to the footnote at the bottom left corner of the "front" of the box where there is a paragraph with one asterisk (*).

The paragraph reads as follows:

***Suction stays constant for up to 10 ounces of dirt, as tested by an independent laboratory using ASTM F558 test method and a dirt composition comprised of 70% mineral dust, 20% cellulose dust and fibrous material.**

SECURITY

All materials related to this study are the property of Target Research Group and our client. You are responsible for all materials being used on this study. All materials are to be kept in a secure location, accessible ONLY to those working on the test and out of sight of anyone not directly involved in the study.

No one representing Target Research Group or our client is to be admitted to the facility or have access to the materials without your first calling Target Research Group to confirm. Further, no one is to be permitted access to the facility or materials without showing satisfactory identification. It is also essential that no person on your staff discuss the study or its topic outside of your offices.

SCREENING LOCATION

If permitted, you are to be stationed throughout the mall to provide the most efficient screening coverage. You must screen for this project only. You may not "double screen" or "piggyback."

DO NOT INTERVIEW ANYONE WITH A HEARING, LANGUAGE OR SIGHT DISABILITY.

INTERVIEW PROCEDURES

You must conduct the interview in a room with a door. The respondent should not be able to hear any sounds from outside the room or have visual interference from another interviewing station.

STAFFING

Each interviewer working on this study should not complete less than 3 interviews or more than 9.

- All interviewers while screening and interviewing on this study are not to be screening or interviewing on any other study.
- You will need experienced interviewers who are good at administering, probing and recording open-ended responses. You may not use an inexperienced or "new" interviewer. They must write legibly.
- **Interviewers are to record the responses verbatim.** Interviewers are to record **ONLY** the answers to the question. Do not record "thoughts or comments" that may be said aloud by the respondent. This means absolutely **NO** paraphrasing.

This questionnaire is largely an open-ended interview. Recording comments verbatim and probing ONLY where indicated are very important and should be monitored carefully. Without proper recording of the verbatim responses, this questionnaire becomes worthless. **A supervisor MUST check the interviews as they are being done.** If you see that a certain interviewer is not recording the answers verbatim or whose writing is not legible, re-brief and replace.

All work should be edited as soon as the interview is completed in order to spot errors and quickly bring them to an interviewer's attention.

BRIEFING AND PRACTICE MATERIALS

Practice Interviews

All personnel involved in the study must attend a personal briefing. **The supervisor must record the briefing on audio tape and return it to us with your final shipment of Screener/Questionnaires.** All interviewers must do at least one Practice Interview. Should it be necessary to assign to this study any interviewers who did not attend the original briefing, then an additional formal briefing of that staff **MUST** be held by a qualified supervisor.

All Practice Interviews must be monitored and reviewed by the supervisor – and any problems cleared up – before actual interviewing begins. It is your responsibility:

- 1) To check each interview to be sure that each interviewer completely understands how to administer the screener and main questionnaire and to obtain the information needed to contact the respondent again for validation, and
 - 2) To check each interview to be sure that all skip patterns are followed and that each interviewer completely understands how to administer the questionnaire.
- Any problem areas must be discussed with the interviewer before any actual screening and/or interviewing is begun. If you have any questions, please call this office.

MAKE SURE YOU ARE FAMILIAR WITH THE SCREENER, THE QUESTIONNAIRE, THE HANDLING OF THE VACUUM CLEANER BOX AND THE INSTRUCTIONS BEFORE YOU BRIEF.

Writing Implements

- o **Use pencil for Screeners.** Because you will be erasing and re-using the Screeners, pencil is the required writing implement.
- o **However, for the Main Questionnaire, you MUST use only blue or black ball-point pen (do not use erasable ink pens).** For the purpose of this study, Main Questionnaires not recorded in blue or black pen will be considered invalid and will not be included in the project or paid for. On the main questionnaire, cross out if necessary.

Screener And Questionnaire Administration Procedures

Asking The Questions

Interviewers should follow all directions and read all questions EXACTLY as written. Interviewers must not paraphrase a question or re-word it. Words that are underlined in a question are to be emphasized when reading the question. If, at any time, the respondent does not seem to understand something, the interviewer should not attempt to interpret the meaning, but slowly re-read the question from the screener or questionnaire, pause and wait for an answer. If the respondent still does not understand, the interviewer should just say, "Whatever you take that to mean," or "However you understand that."

Probe where indicated on the questionnaire using ONLY the probes that are provided at specific questions. DO NOT use any other probes/clarifications or probe/clarify where it is not called for. The exception to this is that interviewers may clarify spelling of any company or business names that are not familiar to them. Consistency among interviewers is essential and is possible ONLY if everyone follows these instructions.

Recording The Answers

Answers on the screener should be recorded in dark (No.2) pencil. Erasing is acceptable on the screener if a respondent is terminated for not meeting a qualification and that screener will be reused.

Answers on the main questionnaire should be recorded in black or blue ball-point pen. NO ERASURES are permitted on the questionnaire. If a recording error is made, the interviewer should draw a line through the erroneous answer; write in the correct answer and initial where the change was made. The interviewer must initial any changes made to the questionnaire.

All recording on BOTH the screener and questionnaire must be done strongly enough so they can be legibly photocopied.

Answers to close-ended questions are to be recorded by circling the number next to the appropriate answer.

Answers to open-ended questions are to be recorded in the appropriate space under the question. If more space is required to answer a question, the back of the page should be used, being sure to label answers so it is clear which question's answer is being written down.

OPEN-END ANSWERS ARE TO BE RECORDED VERBATIM. THIS MEANS WRITE DOWN WHAT THE RESPONDENT SAYS JUST THE WAY THE RESPONDENT SAYS IT. WRITE IT ALL DOWN. DO NOT PARAPHRASE. DO NOT EDIT. DO NOT ERASE. THE INTERVIEWER MUST DRAW A LINE THROUGH ANY INCORRECT WORDS AND ENTER THE NEW CORRECT WORDS. ALL CHANGES MUST BE INITIALED BY THE INTERVIEWER. INTERVIEWERS SHOULD WRITE OR PRINT SLOWLY ENOUGH SO THAT THE ANSWER IS LEGIBLE.

IF YOU HAVE INTERVIEWERS WHO YOUR EXPERIENCE INDICATES CANNOT DO VERBATIM RECORDING THOROUGHLY, PLEASE DO NOT ASK THEM TO WORK ON THIS STUDY!

Penmanship counts! If we cannot read an answer, we cannot use it or the questionnaire!

Following Instructions

There are skips in the questionnaire. Be sure that interviewers are thoroughly familiar with them before starting to interview.

Respondent/Interviewer Certification Boxes

Both the respondent and the interviewer must sign in the appropriate Certification box on the last page of the questionnaire. If the respondent refuses to sign, his/her initials are acceptable.

Each interviewer is to read his/her Interviewer Instructions and sign them. Each interviewer's signed Instructions are to be stapled to his/her practice interview and returned at the end of the study.

STUDY ADMINISTRATION

Editing

All completed work must be 100% edited for 100% accuracy and completeness on a continuing basis. Editor's initials must appear on the first page of the screener and on the first page of the questionnaire. Be sure that each respondent qualifies to be interviewed and that each appropriate question has a response. In editing check for:

- o Completeness of information on the front of each screener (market, version, age/gender)
- o Verbatim capture of responses
- o Proper skip patterns
- o Legible handwriting
- o NO erasures on the Main Questionnaire

If an interviewer appears not to be following instructions exactly, please alert them to that as soon as possible and take remedial action if needed.

If any response on the questionnaire is unclear for any reason, please clarify it with the interviewer. NO ERASURES ARE PERMITTED ON THE QUESTIONNAIRE. The unclear or illegible words will be crossed out by the interviewer, and the correct words will be legibly written next to it by the interviewer. The interviewer must initial any changes made to the questionnaire, not the editor.

Master Quota Sheet

In this shipment you have been provided with One Master Quota sheet. Make sure you review the Master Quota sheet. All over quota interviews will NOT be accepted.

Respondent Numbers

In this shipment is a respondent number worksheet. This form is for your use only and does not need to be returned to TRG. The numbers listed on this form are unique to your location and are the only respondent numbers you may use. No one respondent number can be assigned to more than one respondent. Additionally, the three numbers to the left of your location on the Master Quota Sheet and the three numbers to the right of your location on the front of the screener must match the first three numbers on your respondent number worksheet. When you are editing the questionnaires, make sure the correct city is circled on the front of the screener.

Quality Control Procedures

ANY WORK RECEIVED BY OUR OFFICE WHICH HAS NOT BEEN SUBJECT TO THE FOLLOWING PROCEDURES WILL BE SUBJECT TO A PAYMENT ADJUSTMENT.

Strict quality control is a primary Supervisor responsibility. Target Research Group requires that the following controls be followed:

1. This study must be screened by itself, not along with any other projects.
2. No more than one respondent per shopping group should be screened.
3. Friends, relatives or acquaintances must NOT be interviewed.
4. No one is to be in the interviewing room with the respondent, except a small child if necessary.
5. Anyone accompanying the respondent must wait for the respondent in the waiting room.
6. Interviewing should not be conducted with anyone who has a hearing, visual or English language problem.

Validation Sheets

- o List only ONE interviewer's work on a validation sheet.
- o Fill out all required respondent information, interviewer name, city and the quota groups (cell color, gender and age).
- o Be sure about indicating correct area code for every respondent.
- o Write listings in black or blue ink ONLY.
- o **Do not phone validate, since we will be independently validating 100% of every interviewer's work.**
- o You must however, monitor each interviewer's work for eligibility and completeness.
- o SEND VALIDATION SHEETS WITH EVERY SHIPMENT

Handling "No Phone" or "Refused Phone"

The Supervisor must attempt to do a telephone lookup for all respondents who do not give a phone number. If a number is not found, indicate that you have attempted to look-up by writing "L.U." on the validation form.

Daily Reporting/Transmission/Study Management

The daily report must be faxed (845-426-6890 or 845-426-1218) to my office not later than 8:30 AM ET Monday through Friday. You may find it necessary to fax the report the night before or at the end of your shift. At whatever time you need to cut off the figures to ensure the report is in my office by the designated time is fine. Make sure that you are recording the interviews and terminations accurately on the daily report, it is imperative that this information is recorded correctly.

Schedule

In this shipment is a study schedule. The schedule will outline for you the study dates AND the dates of any partial shipments of completed questionnaires. Make sure all related personnel are familiar with this schedule.

Please note that in addition to the completed materials to be returned to us upon completion of this study, all display materials must be returned to this office. Refer to Shipping Instructions and Schedule for shipping specifics.

Study Management

Please read the instructions and brief the study carefully. Prior to beginning the study if you have any questions, contact my office at 845-426-1200. As always, if during the study you should encounter any problems, call me, fax me, but let me know. Your assistance in ensuring the quality of this study is greatly appreciated.

Thank you,

Nelson Davis

EXHIBIT Q

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

-----X	
DYSON, INC.	: Electronically Filed
	: :
Plaintiff,	: :
	: Civil Action No. 06 CV 6576 (DLC)
v.	: :
	: :
MAYTAG CORPORATION	: :
	: :
Defendant.	: :
-----X	

REPLY MEMORANDUM IN SUPPORT OF
MAYTAG CORPORATION'S MOTION TO TRANSFER VENUE

Defendant Maytag Corporation ("Maytag") respectfully submits this reply memorandum in support of its motion, pursuant to 28 U.S.C. § 1404(a), to transfer this lawsuit ("the New York Lawsuit") filed by Plaintiff Dyson, Inc. ("Dyson") to the District of Delaware for possible consolidation with a related, pending action between both parties (the "Delaware Lawsuit").

PRELIMINARY STATEMENT

Dyson's memorandum in opposition ignores most of the compelling reasons why transfer is appropriate in this case and fails to demonstrate that New York is a more convenient forum for this case to proceed than Delaware.

Maytag, however, has set forth compelling reasons why the balance of conveniences and the interests of justice heavily support transfer to the District of Delaware: (1) a related action between both parties is pending in Delaware; (2) the witnesses are already scheduled, and willing, to testify in Delaware; (3) discovery in the Delaware Lawsuit has already

begun; (4) all operative facts occurred outside the State of New York; and (5) adjudicating two nearly identical claims with common legal issues before one court serves the laudatory goal of judicial economy and prevents the risk of inconsistent results. In sum, transfer of this action to Delaware serves the convenience of both parties and the interests of both this Court and the Delaware Court.

Dyson's response includes arguments that are factually and legally unsound. First, Dyson does not contest the fact that a plaintiff's choice of forum is entitled to little, if any, weight where the plaintiff has little contact with the forum state. Rather than submit evidence of any contact with New York other than its own product sales, Dyson unsuccessfully attempts to distinguish the case law on which Maytag relies. (Pl. Mem. at 7-8.) Second, in its discussion of the conveniences of parties and witnesses, Dyson ignores the fact that witnesses are required to appear in Delaware regardless of this Court's transfer determination. Id. at 9. Moreover, Dyson conveniently ignores the fact that the Philadelphia International Airport is an equivalent distance from Wilmington as Kennedy and La Guardia Airport are from Manhattan. Id. Dyson also erroneously asserts that the convenience of counsel is a factor that should be considered when courts have explicitly excluded this consideration when balancing conveniences. Third, Dyson gravely misconstrues the locus of operative facts element by focusing on its own product sales, when it is the product sales of Maytag, and the corresponding advertisements, that are the bases for Dyson's false advertising claims. Id. at 10.

Dyson's remaining arguments are unavailing and completely fail to address the fact that a related action between both parties is pending in Delaware. Dyson's attempt to claim that Delaware is an inconvenient forum is untenable because Dyson initiated the Delaware Lawsuit. The fact that Maytag filed permissive counterclaims in the Delaware Lawsuit does not

change the fact that Dyson's initial choice of forum was Delaware. Although Maytag's Delaware counterclaims were permissive, Maytag sought the convenience of adjudicating all issues between the parties in one forum.

Moreover, Dyson's attempt to pursue this action in the Southern District of New York presents a blatant case of forum shopping. After initiating the Delaware Lawsuit, Dyson promptly filed a motion for a preliminary injunction on its patent claims (the "Motion"). It also moved to have the Motion briefed and decided on an expedited basis, which Judge Sleet denied, finding that there was no basis for any exigency. (Declaration of Anthony DiSarro, affirmed on October 6, 2006 ("DiSarro Decl."), Ex. A.) Judge Sleet also denied the Motion, holding that Dyson was not likely to succeed on the merits of its patent claims and could not show irreparable injury. (DiSarro Decl., Ex. B.) Clearly, Dyson did not want to run this course again only to suffer the same result before Judge Sleet. That is why Dyson filed this action in New York.

ARGUMENT

I. Transfer To Delaware Is Clearly Warranted

A. Dyson's Choice Of Forum Carries Little, If Any, Weight

Dyson presents scant evidence to support why its choice of forum should be given any weight. A plaintiff's choice of forum is given little weight where, as here, the case's operative facts have little connection with the chosen forum, for instance, where the chosen forum is neither the plaintiff's home nor the place where the cause of action arose. See IBM Corp. v. Fair Isaac Corp., No. 05 Civ. 10296 (DLC), 2006 U.S. Dist. LEXIS 11949, at *9 (S.D.N.Y. Mar. 23, 2006); Schneider v. H.A. Sears, 265 F. Supp. 257, 266-67 (S.D.N.Y. 1967). Under its choice of forum analysis, Dyson presents no evidence of contact with New York except for its own product sales and fails to effectively address the IBM case recently decided by this Court that is directly on point.

Dyson's entire argument in support of its choice of forum consists merely of an attempt to distinguish IBM v. Fair Isaac Corp. based upon factual nuances. The glaring omission in Dyson's argument, however, is the complete absence of any legal authority supporting its argument that its choice of forum is entitled to "great weight." The entire body of law in this Circuit holds otherwise, that when the plaintiff and defendant have no contacts with the forum, the plaintiff's choice of forum is entitled to little weight. See Gross v. British Broadcasting Corp., 386 F.3d 224, 230 (2d Cir. 2004) ("the degree of deference to the plaintiff's forum depends in part on a number of considerations, such as the plaintiff's own connection to that forum."); IBM, 2006 U.S. Dist. LEXIS 11949, at *9; Portman v. Alza Corp., No. 05 Civ. 10018 (DLC), 2006 U.S. Dist. LEXIS 29685, at *5 (S.D.N.Y. May 17, 2006) (rejecting plaintiff's choice of forum where an insufficient connection existed between the forum and the action); Mishnayot v. MGM Mirage, No. 01 Civ. 9955 (DLC), 2002 U.S. Dist. LEXIS 2791, at *4 (S.D.N.Y. Feb. 22, 2002) (affording plaintiff's choice of forum substantially less deference where the "operative facts upon which the litigation is brought bear little material connection to the chosen forum.").

In its desperate attempt to escape from the legal reasoning applied in IBM, Portman, and Mishnayot, Dyson narrowly focuses on the Court's comment in IBM that the plaintiff filed its claim in retaliation to defendant's earlier filed action.¹ (Pl. Mem. at 8.) Dyson

¹ In IBM, the plaintiff filed a patent action in the Southern District of New York after defendant previously filed a patent action in the District of Minnesota. IBM, 2006 U.S. Dist. LEXIS 11949, at *2. The convenience of witnesses, convenience of the parties, and location of evidence did not favor the plaintiff's chosen forum, New York. Thus, this Court held that the countervailing factors, combined with the previously filed case in Minnesota, outweighed the plaintiff's choice of forum. Id. at *9; see also Portman v. Alza Corp., No. 05 Civ. 10018 (DLC), 2006 U.S. Dist. LEXIS 29685, at *5 (S.D.N.Y. May 17, 2006) (transferring the case where virtually no connection existed between the New York forum and the litigation, other than the plaintiff's recent adoption of New York as her domicile); Mishnayot v. MGM Mirage, No. 01 Civ. 9955 (DLC), 2002 U.S. Dist. LEXIS 2791, at *4 (S.D.N.Y. Feb. 22, 2002) (transferring the case where the locus of operative facts and witnesses had no contact with the State of New York, despite plaintiff's residence in the chosen forum).

contends that it did not sue Maytag in retaliation for the counterclaims that Maytag filed in the Delaware Lawsuit. Id. Even assuming that to be true, which is highly debatable, the fact remains that there is a prior pending action between the parties that Dyson initiated and that concerns subjects that are closely related to those at issue here. The facts favoring transfer are more compelling here than in IBM.

B. The Convenience Of Witnesses And Parties Heavily Supports Transfer

Dyson's argument that New York is a more convenient forum for the parties and witnesses is factually and legally unsound. Dyson's assertion that none of the individuals reside in Delaware making Delaware inconvenient is hypocritical when the same holds true for its patent case that Dyson filed in Delaware.

Dyson's discussion of travel times to New York versus Delaware is immaterial. While witnesses will certainly have the option of flying into Wilmington, Delaware, they can also fly into Philadelphia International Airport, which is only twenty minutes from Wilmington. Since Philadelphia is equally accessible as New York from most destinations in the United States and the world, Dyson's argument is unavailing.

Dyson also ignores the fact that most, if not all, witnesses must already travel to Delaware, regardless of whether this action remains in New York. Given the similarity of the questions of law and fact between the Delaware and the New York Lawsuits, each party's witnesses in both lawsuits will likely be the same. For example, Dyson subpoenaed Susan Goldsmith, the Managing Director of Inter Basic Resources, Inc. ("IBR"), in the Delaware Lawsuit to provide information regarding advertising claims made by, and testing of vacuum cleaners of, both Dyson and Hoover. (DiSarro Decl., Ex. C.) Goldsmith, a resident of Michigan, has been hired by Dyson for the New York Lawsuit despite it knowing that she is also a likely

witness in the Delaware Lawsuit.¹ It makes little sense for her to testify and provide evidence in both Delaware and New York. Dyson's other expert in this case, Michael Mazis, resides in Washington, D.C., and thus Delaware would be a more convenient forum to him than New York. As for Maytag witnesses, Dan Müller and Dave Baker are already witnesses in the Delaware Lawsuit and testifying in New York will be an additional burden on them.

Dyson's argument that New York is more convenient for counsel should be completely discounted. It is well-settled in this district that the convenience of counsel is not an appropriate factor to consider on a motion to transfer. Fuji Photo Film Co. v. Lexar Media, Inc., 415 F. Supp. 2d 370, 374 (S.D.N.Y. 2006); Ritz Hotel, Ltd. v. Shen Mfg. Co., 384 F. Supp. 2d 678, 684 (S.D.N.Y. 2005); In vivo, 119 F. Supp. 2d at 438. Dyson's argument is even more disingenuous considering the fact that the Manatt Phelps firm is counsel for Dyson in both the New York Lawsuit and the Delaware Lawsuit. In sum, Dyson's reliance on travel times and the convenience of counsel is misplaced and fails to exhibit why New York is a convenient forum. Thus, this factor weighs strongly in favor of transfer to Delaware.

C. No Operative Facts Occurred Within New York

Dyson's claim that the locus of operative facts occurred in New York, based on its own product sales, misses the point. The operative facts of a Lanham Act claim consist of the defendant's alleged infringing conduct. See Intira Corp. v. Intira Corp., No. 00 Civ. 7198 (AGS), 2000 U.S. Dist. LEXIS 17039, at *19 (S.D.N.Y. Nov. 27, 2000) (holding that the locus of operative facts is in the forum where infringement occurred); Brockmeyer v. May, No. 98 Civ. 5521 (DLC), 1999 U.S. Dist. LEXIS 4372, at *11 (S.D.N.Y. April 6, 1999) (stating that the locus of operative facts element considers the "operative facts upon which the litigation is brought").

¹ Indeed, Dyson identified IBR as being knowledgeable about the testing of Dyson's products in its Rule 26(a) disclosures in the Delaware Lawsuit. (Durchslag, Decl., Ex. C at 5).

Specifically, Dyson argues that it has a material connection with the State of New York based on its "relatively high percentage of national sales in the state." (Pl. Mem. at 10-11.) However, sales of Dyson products did not give rise to this action. Rather, Maytag's sales of its vacuum cleaners, the Hoover FusionTM ("Fusion") and the Maytag LegacyTM ("Legacy"), which use the "No Loss of Suction" claim, are the purported basis of Dyson's false advertising claim. Therefore, Dyson's argument based on its own product sales should be disregarded.³

Aside from a percentage of Maytag's product sales, the locus of operative facts occurred outside of the State of New York. For example, Maytag's marketing and advertising decisions regarding the FusionTM and the LegacyTM took place in Canton, Ohio, and the agency that created the advertisements for FusionTM and the LegacyTM is located in Pittsburgh, Pennsylvania. (Declaration of David M. Baker ¶ 6.). Therefore, the instant facts dictate that Dyson's choice of forum should be afforded little, if any, weight.

D. The Discovery In Both Forums Is Duplicative

Dyson incorrectly claims that "there is no evidentiary or documentary advantage or disadvantage by litigating the instant case in a separate forum." (Pl. Mem. at 15.) However, Dyson concedes that it has already sought documents in the Delaware Lawsuit that are related to

³ Assuming arguendo that Dyson's own product sales gave rise to this false advertising action, 3% of national sales remains insufficient to establish a material connection with New York. Dyson fails to sufficiently distinguish Invivo, which held that "sales alone are insufficient to establish a material connection to the forum" where "a party's products are sold in many states." 119 F. Supp. at 439-40. Dyson notes that the party resisting transfer in Invivo had only 1% of sales in the forum state. (Pl. Mem. at 12.) Dyson argues that while 1% of sales is insufficient, its New York sales totaling 3% is sufficient. Id. at 11-12. Clearly, this argument is without merit as the negligible difference between 1% and 3% is, at best, arbitrary.

Moreover, Dyson mischaracterizes the holding in GlaxoSmithKline Consumer Healthcare, L.P. v. Merix Pharmaceutical Corp. to support its claim that 3% of national sales in New York is sufficient alone to establish a material connection. Specifically, Dyson states that the New Jersey court in Glaxo found that defendant's 4.5% of national sales in New Jersey was sufficient to establish a material connection between the plaintiff and the forum state and to defeat defendant's motion to transfer. No. 05-898 (DRD), 2005 U.S. Dist. LEXIS 40007, at *17 (D.N.J. May 10, 2005). Unlike the instant case, the plaintiff in Glaxo presented additional material connections with New Jersey, including the location of a research and development facility and witness residences. Id. Thus, the court did not find that 4.5% of national sales was sufficient alone to establish a material connection with the plaintiff's chosen forum.

the suction claims for the Fusion and the Legacy before this Court. *Id.* Moreover, both parties are already engaged in discovery in the Delaware Lawsuit that overlaps discovery in the New York Lawsuit. As a result, evidence relevant to the New York Lawsuit will be presented in Delaware, specifically documents relating to testing, science and technology issues. (Durchslag Decl., ¶ 5.) Moreover, with respect to document discovery, Dyson and Maytag agreed to produce documents for both lawsuits by December 4, 2006. Thus, Dyson's pending motion for a preliminary injunction, if transferred to Delaware, will not be impeded in any way.

E. The Interests Of Justice Mandate Transfer To Delaware

Dyson failed to overcome the well-established proposition that the existence of a related action pending in the transferee court weighs heavily towards transfer because it serves the interests of justice. Jean Summit v. U.S. Dynamics Corp., No. 97 Civ. 9224 (VM), 2000 U.S. Dist. LEXIS 5453, at *6 (S.D.N.Y. Apr. 26, 2000). Specifically, Dyson claims that transfer will not serve judicial efficiencies because: (1) a court need not compare the parties' use of competing testing standards to decide this case; and (2) consolidation is not assured. (Pl. Mem. at 13-14.)

Dyson's first claim is without merit. Even though the court need not address the substantiation of Dyson's own suction claim, the court must address both testing standards. While Dyson relies on the European-based IEC testing standard in an attempt to disprove Maytag's claim, Maytag conversely relies on the US-based ASTM testing standard to substantiate its "No Loss of Suction" claim. Therefore, a court must address both testing standards to judge which test more accurately reflects household cleaning conditions and whether Maytag's claim is adequately substantiated.

Second, the issue of consolidation is a red herring. Whether a transferred case will be consolidated with a related pending action is in the discretion of the transferee court. See Harris Moran Seed Co. v. Moreton Seeds, Inc., No. 88 Civ. 2006 (PKL), 1989 U.S. Dist. LEXIS 1903, at *2 (S.D.N.Y. March 1, 1989) (holding that a decision to consolidate should be determined by the transferee court); Faigenbaum Machinery, Inc. v. Scott & Williams, Inc., 344 F. Supp. 1267, 1271 & n.1 (S.D.N.Y. 1972) (same). By transferring this case, the Delaware Court can determine whether or not consolidation will maximize judicial efficiency. Even if the actions are not consolidated, judicial efficiencies will be realized where one forum adjudicates both related actions. Therefore, transfer of this action to a district in which a related action is pending serves the interests of justice and judicial economy.

F. The Delaware District Court Is Equally Capable To Adjudicate This Action

The federal courts in Delaware and New York are equally capable of adjudicating Lanham Act claims.⁴ Therefore, this factor does not support a New York forum.

G. Transfer To Delaware Is Cost-Effective For Both Parties

Dyson's argument that Maytag is financially capable of litigating in New York ignores the existence of the Delaware Lawsuit and the fact that litigating all actions in one forum will be cost effective. (Pl. Mem. at 16.) Thus, transfer of this action to Delaware would result in a far less costly litigation. Therefore this factor weighs in favor of transfer.

⁴ Indeed, Dyson and Maytag have agreed, and this Court has ordered, that all discovery in the Delaware case will be admissible with respect to the claims asserted here. Thus, the parties will be able to litigate Dyson's motion for a temporary injunction in Delaware promptly upon a transfer to that Court.

CONCLUSION

By filing a patent case in Delaware, Dyson concedes that it is a convenient forum. Discovery has already taken place in Delaware on the very issues raised in the New York Lawsuit and allowing it to proceed in New York would result in a duplication of effort.

Dated: New York, New York
October 6, 2006

Respectfully submitted,

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EXHIBIT R

1 IN THE UNITED STATES DISTRICT COURT
2 IN AND FOR THE DISTRICT OF DELAWARE
3 - - -
4 DYSON TECHNOLOGY LIMITED : Civil Action
 and DYSON, INC., :
5 :
 Plaintiffs, :
6 :
 v. :
7 :
 MAYTAG CORPORATION, :
8 :
 Defendant. : No. 05-434 (GMS)
9 - - -

10 Wilmington, Delaware
11 Thursday, December 7, 2006
 2:00 p.m.
12 Telephone Conference
13 - - -

14 BEFORE: HONORABLE GREGORY M. SLEET, U.S.D.C.J.

15 APPEARANCES:

16 JOHN W. SHAW, ESQ., and
 C. BARR FLINN, ESQ.
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 -and-
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22 (New York, N.Y.)

23 Counsel for Plaintiffs
24
25

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1 That case was filed later and in New York
2 because there was a pending NAD proceeding that is, as you
3 may know, an arbitration proceeding for advertising, pending
4 in New York. It was an attempt by us to resolve it
5 amicably, without the need for Court intervention. When
6 Hoover failed to comply with the NAD recommendation, we had
7 no choice but to bring separate preliminary injunction
8 actions.

9 THE COURT: Okay.

10 MR. ROTHSTEIN: Your Honor, that is a red
11 herring, respectfully. We think they were forum-shopping.
12 They think that they were weighing --

13 THE COURT: You think they didn't like me so
14 much. Is that what you are saying?

15 MR. ROTHSTEIN: Well, Your Honor, you said it, I
16 didn't.

17 THE COURT: That's okay. I have thick skin.

18 All right. Then we need a discovery and
19 briefing schedule?

20 MR. DIGIOVANNI: Your Honor, the particular
21 issue we have listed here relates to Dyson's motion for
22 preliminary injunction. The Judge in New York entered an
23 order. If that were to apply, Judge Cote has enumerated a
24 whole list of items that she had required, such as
25 (inaudible) facts, findings of fact and conclusions of law.

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1 THE COURT: You are breaking up. Are you on a
2 speaker? You are cutting in and out.

3 MR. DIGIOVANNI: Is this better?

4 THE COURT: Yes.

5 That schedule is no longer operative, no.

6 MR. DIGIOVANNI: That is what we were looking
7 for, Your Honor, Your Honor's word on that, as well as, we
8 had proposed to submit our answering brief to the
9 preliminary injunction motion on December 22nd, and we
10 hadn't had agreement from Dyson's counsel.

11 THE COURT: Is this a matter that -- let's talk
12 about discovery first. Is there a separate issue there, as
13 to the motion for preliminary injunction?

14 UNIDENTIFIED SPEAKER: The motion for
15 preliminary injunction does set forth some discovery, a
16 discovery deadline. I don't believe there is an issue. I
17 will defer to Mr. DiSarro if there is an issue on the
18 preliminary injunction discovery.

19 THE COURT: So my colleague up in the Southern
20 District has already set a deadline that the parties are
21 comfortable with?

22 MR. DIGIOVANNI: Let me defer to Mr. DiSarro on
23 that issue.

24 MR. DiSARRO: Judge, on behalf of Maytag.

25 The only thing we need is a date to file our

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1 answering brief on the preliminary injunction. But we need
2 a separate schedule for merits discovery in the transfer
3 because there has been no discovery at all conducted in that
4 case.

5 THE COURT: Have you had that meet-and-confer o
6 this particular issue?

7 MR. DiSARRO: Well, we have, but it's -- it
8 hasn't worked because Dyson is of the view that the case
9 should track the same discovery schedule that has been
10 established in the case before Your Honor, and that's
11 frankly impossible because the discovery schedule is over.

12 THE COURT: Okay. So I take it we do have
13 separate and distinct issues in the 06-654 case, the New
14 York case.

15 MR. DiSARRO: Absolutely. There are claims
16 against Hoover's advertising claims, and they have asserted
17 claims for injunctive relief and for damages under the
18 Lanham Act, and there are some similarities. But there has
19 been no discovery whatsoever conducted in that case.

20 THE COURT: Does this also get into the other
21 side issue on the 654 case, that is, whether it should be
22 consolidated with the case that is currently pending?

23 MR. DiSARRO: Right. We believe that, frankly,
24 is impossible. It might have been a good idea at the very
25 beginning, but Dyson for whatever reason chose to file the

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1 case in New York and then contest our effort to transfer the
2 case down to Your Honor. And we went through a lengthy
3 briefing schedule on a venue 1404 transfer motion, and Judge
4 Denise Cote was kind enough to give us a prompt resolution
5 of that.

6 But here we are, and we need discovery. Both
7 sides have not conducted any discovery on that case. And
8 it's just engaging in unreality to think it can be
9 consolidated with a case in which discovery is virtually
10 complete, expert discovery is about to begin and the parties
11 are ready to go to trial in May.

12 UNIDENTIFIED SPEAKER: The other aspect of it is
13 in that particular case, Your Honor, we are retaining our
14 right to summary judgment.

15 THE COURT: Who is speaking now?

16 MR. DURCHSLAG: Steve Durchslag again.

17 In that particular case, we are reserving our
18 right to summary judgment, whereas Your Honor knows in the
19 case before you in Delaware, we, both parties have agreed
20 not to seek summary judgment.

21 THE COURT: Okay. Who is going to speak on
22 these issues for Dyson?

23 MR. COLE: Your Honor, Chris Cole.

24 This is an instance of having your cake and
25 eating it, too.

EXHIBIT S

IN THE UNITED STATES DISTRICT COURT

IN AND FOR THE DISTRICT OF DELAWARE

- - -

DYSON, INC., : Civil Action
:
Plaintiff, :
:
v. :
:
MAYTAG CORPORATION, :
:
Defendant. : No. 06-654-GMS

- - -

Wilmington, Delaware
Thursday, March 15, 2007
9:30 a.m.
Conference

- - -

BEFORE: HONORABLE GREGORY M. SLEET, U.S.D.C.J.

APPEARANCES:

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(Chicago, IL)

Counsel for Defendant

1 is not moot. If they are prepared, obviously, to enter into
2 a stipulated injunction, given their representation, we will
3 entertain that and are prepared to negotiate appropriate
4 language to try to ease the burden on Your Honor of having
5 to deal with the preliminary injunction. Frankly, that
6 might not be a problem, given what they have said they are
7 going to do.

8 That is our position.

9 THE COURT: Counsel.

10 MR. DiSARRO: Your Honor, there are two vacuum
11 cleaners at issue, the Fusion and the Legacy. Neither are
12 manufactured anymore. The Fusion is in fact no longer being
13 shipped to retailers. So there is no loss-of-suction claim
14 being made in connection with the Fusion today. As I
15 understand, it has been removed from the website.

16 THE COURT: As to the Fusion.

17 MR. DiSARRO: As to the Fusion. That's correct.

18 As to the Legacy, the last shipment containing a
19 no-loss-of-suction claim on the packaging will be done in
20 April, and that there are no no-loss-of-suction claims being
21 made anywhere else.

22 Regarding the NAD decision, which is a
23 nonbinding adjudication, not even an adjudication because it
24 has no adjudicative authority, but a nonbinding mediation,
25 they indicated that the no-loss-of-suction claim was

1 improperly applied as a cleaning benefit to consumers. The
2 company did in fact make changes to its ads to advise
3 consumers that there were separate tests substantiating
4 cleaning superiority for the vacuum cleaners.

5 The NAD said your changes are not sufficient to
6 us. They referred it to the FTC. The FTC has taken no
7 further action on the matter whatsoever.

8 So in light of this, we certainly feel that
9 there is no reason for a preliminary injunction motion in
10 this case.

11 I also understand that the Legacy,
12 no-loss-of-suction claims are being made on the website with
13 regard to the Legacy.

14 THE COURT: What about the observation made this
15 morning, was it?

16 MR. HUMMEL: Correct, Your Honor. We found at
17 least three websites with the no-loss-of-suction claim being
18 made publicly in connection with the Hoover Fusion product.
19 Now, it may well be true that they have stopped
20 manufacturing and they have stopped shipping with that claim
21 and they have taken it off their website. We view those as
22 positive developments, and perhaps as a result of this
23 lawsuit.

24 But without an injunction in place, nothing
25 stops them from doing it again. That is why we need to go

EXHIBIT T

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

DYSON, INC.,)	
)	
Plaintiff,)	
v.)	Civil Action No. 06-654-GMS
)	
)	
MAYTAG CORPORATION,)	
)	
Defendant.)	

**DEFENDANT'S OBJECTIONS AND RESPONSES
TO PLAINTIFF'S SPECIAL INTERROGATORIES REGARDING
PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION**

Defendant ("Hoover")¹, by and through its counsel, hereby submits the following objections and responses to the Special Interrogatories regarding Plaintiff's Motion for Preliminary Injunction ("Special Interrogatories") served by Plaintiff ("Dyson").

I. GENERAL OBJECTIONS

1. To the extent these Special Interrogatories may be construed as calling for the production of information that is subject to a claim of privilege, including, without limitation, the attorney-client privilege or the work product doctrine, Hoover asserts that privilege and objects on that basis. To the extent any information protected by the attorney-client privilege or the work product doctrine or by any other applicable privilege is produced inadvertently, Hoover has not authorized such production, and no waiver of any privilege shall be inferred from such inadvertent production.

¹ Subsequent to the filing of the complaint and motion for preliminary injunction in this case, substantially all of the assets and liabilities of The Hoover Company, which was operated as a division of The Maytag Corporation at the time of suit, were sold to a newly formed corporation called "Hoover, inc." and to entities owned by Hoover, Inc., including Hoover General LLC, Hoover Limited LLC and The Hoover Company I, L.P. Counsel for Defendant has notified counsel for Plaintiff of this transfer of assets and liabilities.

2. Hoover objects to Dyson's Special Interrogatories to the extent they impose upon Hoover obligations which exceed those imposed by the Federal Rules of Civil Procedure and the Local Rules.

3. To the extent these Special Interrogatories call for the production of information of a non-public, confidential, or proprietary nature, including trade secrets and/or commercial, financial or other information that has not been disseminated publicly, or any other matter protected by any commercial information or similar privilege, Hoover hereby asserts the confidentiality of such information. Hoover's answers to these Special Interrogatories are hereby designated as Highly Confidential under the terms of the parties' agreed upon Protective Order and any letter or oral agreements among the parties regarding the confidentiality of documents and other information.

4. Hoover objects to these Special Interrogatories to the extent they seek information not reasonably calculated to lead to the discovery of admissible evidence; which is unreasonably cumulative or duplicative, or obtainable from some other source that is more convenient, less burdensome or less expensive; or which Dyson has ample opportunity to obtain from other sources.

5. Hoover objects to these Special Interrogatories to the extent they seek overly broad information over which Hoover exercises no control or has no knowledge.

6. Hoover objects to these Special Interrogatories to the extent they encompass topics and seek information beyond the scope of the Court order which permitted Dyson to serve these interrogatories. *See Telephone Conference Tr. at 18-19 (Mar. 29, 2007).*

7. Hoover objects to these Special Interrogatories to the extent Dyson intends to equate from Hoover's responses any legal conclusions or determination of liability related to this lawsuit.

8. Hoover's responses are based on information currently in its possession.

Investigation continues, and Hoover reserves the right to supplement its responses to these Special Interrogatories.

II. RESPONSES AND OBJECTIONS TO SPECIAL INTERROGATORIES

1. Identify the corporate entity that is presently responsible for any manufacture, distribution, and/or marketing (including advertising, packaging, or promotional activities) of the Hoover Fusion vacuum cleaner. (For purposes of this interrogatory, "identify" means state the precise corporate name, the state by which it is incorporated, and its principal place of business. "Presently" means as of the date of the response to this interrogatory.)

Hoover, Inc., a Delaware corporation, presently is responsible for the manufacture, distribution and/or marketing (including advertising, packaging, or promotional activities) of the Hoover Fusion vacuum cleaner. Hoover, Inc's principal place of business is located at 7005 Cochran Road, Glenwillow, Ohio 44139

2. Identify the corporate entity that is presently responsible for any manufacture, distribution and/or marketing (including advertising, packaging, and promotional activities) of the Maytag Legacy vacuum cleaner. (For purposes of this interrogatory, "identify" means state the precise corporate name, the state by which it is incorporated, and its principal place of business. "Presently" means as of the date of the response to this interrogatory.)

Hoover, Inc., a Delaware corporation, presently is responsible for the manufacture, distribution and/or marketing (including advertising, packaging, or promotional activities) of the Maytag Legacy vacuum cleaner. Hoover, Inc's principal place of business is located at 7005 Cochran Road, Glenwillow, Ohio 44139

3. State the total volume of sales of the Hoover Fusion vacuum cleaner in the United States between September 7, 2006 and the present. (For purposes of this interrogatory, "volume of sales" means the number of units and total revenues from such sales, and "present" means as of the date of the response to this interrogatory.)

Between September 1, 2006 and March 31, 2007, 105,879 Hoover Fusion and Hoover Fusion Plus vacuum units were sold in the United States. We presently do not know the

number of units sold during the month of April 2007. The total revenues for these sales amount to \$9,083,308.

4. State the total volume of sales of the Maytag Legacy vacuum cleaner in the United States between September 7, 2006 and the present. (For purposes of this interrogatory, "volume of sales" means the number of units and total revenues from such sales, and "present" means as of the date of the response to this interrogatory.)

Between September 1, 2006 and March 31, 2007, 17,252 Maytag Legacy vacuum units were sold in the United States. We presently do not know the number of units sold during the month of April 2007. The total revenues for these sales amount to \$1,601,638.

5. State the precise date on which all manufacturing and marketing (including any advertising, packaging or promotional activities) of the Hoover Fusion vacuum cleaner, and which included any claims with the words "No Loss of Suction" or words of substantially similar meaning or import, ceased.

Manufacturing and Marketing: During March 2007, all manufacturing of the Hoover Fusion or Hoover Fusion Plus vacuum cleaners ceased.

As of April 30, 2007, Hoover will cease distribution of any marketing, including any advertising, packaging or promotional activities related to claims with the words "No Loss of Suction" or words of substantially similar meaning or import related to the Hoover Fusion and Maytag Legacy.

6. State the precise date on which all manufacturing and marketing (including any advertising, packaging or promotional activities) of the Maytag Legacy vacuum cleaner, and which included any claims with the words "No Loss of Suction" or words of substantially similar meaning or import, ceased.

Manufacturing and Marketing: During March 2007, all manufacturing of the Maytag Legacy vacuum cleaner ceased.

As of April 30, 2007, Hoover will cease distribution of any marketing, including any advertising, packaging or promotional activities related to claims with the words "No Loss of

Suction" or words of substantially similar meaning or import related to the Hoover Fusion and Maytag Legacy.

7. In connection with any planned or anticipated manufacture and sales of any Hoover Fusion or Maytag Legacy vacuum cleaners after the date of the response to this interrogatory, state the following:

(a) all advertising, packaging, or promotional claims that will be made about the products, including, but not limited to, claims of "No Loss of Suction" or words of substantially similar meaning or import, and/or that the product has been shown by testing under the ASTM F558 standard to have constant suction, or no loss of suction up to 10 ounces of dirt;

(b) the presently planned number of units to be manufactured and shipped containing such claims;

(c) the sales outlets or channels into which such products will be shipped; and

(d) the estimated costs that would be incurred in removing or covering by sticker on all packaging for these products any words or visual images that state or otherwise communicate that these products have "No Loss of Suction" and removing all displays, including in-store displays, that state or otherwise communicate that these products have "No Loss of Suction."

(a) Future Claims: Hoover does not intend to manufacture the Hoover Fusion or the Maytag Legacy vacuums after the date of these Special Interrogatories with the claims identified in this subsection (a) above.

As of April 30, 2007, Hoover does not intend to distribute the Hoover Fusion or the Maytag Legacy vacuums with the claims identified in this subsection (a) above.

(b) Manufacturing and Shipments: The presently planned vacuums to be manufactured with the claims identified in subsection (a) above is zero.

As of April 30, 2007, the presently planned vacuums to be shipped with the claims identified in subsection (a) is zero. Hoover is unable to calculate the number of vacuums to be shipped between the date of these Special Interrogatories and April 30, 2007

as Hoover will not receive this shipment information until the end of this month. However, the amount will not be greater than the present amount of inventory, approximately 1,228 units of Fusion/Fusion Plus and 8,314 units of the Maytag Legacy. After April 30, 2007, no Hoover Fusion/Fusion Plus or Maytag Legacy units will be shipped with the claims identified in subsection (a) above.

(c) Sale Outlets and Channels of Sale: Any Hoover Fusion/Fusion Plus or Maytag Legacy products shipped after the date of these Special Interrogatories may be shipped to the following sale outlets: Home Depot, Home Shopping Network, Odd Lots and Big Lots.

(d) Estimated Costs: Hoover estimates that the "costs which would be incurred in removing or covering by sticker on all packaging for these products any words or visual images that state or otherwise communicate that these products have 'No Loss of Suction' and removing all displays, including in-store displays, that state or otherwise communicate that these products have 'No Loss of Suction'" to be approximately \$200,000.

8. Identify any and all steps taken by Maytag, including any of its affiliated entities and successors, between September 7, 2006 and the present, to substantiate or otherwise validate advertising or marketing claims made about either the Hoover Fusion or Maytag Legacy products to the effect that the products have "No Loss of Suction." (For purposes of this interrogatory, "identify" means state the date such steps were taken, describe the "steps," state the names and corporate affiliations of all persons who took and or who were responsible for taking such "steps," and state the results of such "steps.")

Hoover strongly objects to this Special Interrogatory as it encompasses topics and seek information beyond the scope of the Court order which permitted Dyson to serve these interrogatories. *See Telephone Conference Tr. at 18-19 (Mar. 29, 2007)*. Consequently, Hoover will not respond to Special Interrogatory 8 at this time.

9. Identify any and all communications with either the National Advertising Division of the Better Business Bureau or the Federal Trade Commission regarding advertising claims made about the Hoover Fusion or the Maytag Legacy between August 2006 and the present. (For purposes of this interrogatory, "identify" means state the date,

persons involved in, and substance of each such communication. "Present" means as of the date of the response to this interrogatory.)

Hoover strongly objects to this Special Interrogatory as it encompasses topics and seek information beyond the scope of the Court order which permitted Dyson to serve these interrogatories. *See* Telephone Conference Tr. at 18-19 (Mar. 29, 2007). Consequently, Hoover will not respond to Special Interrogatory 9 at this time.

Respectfully submitted,

MAYTAG CORPORATION

Dated: April 13, 2007

/s/ Francis DiGiovanni
Francis DiGiovanni
James Heisman
Connolly Bove Lodge & Hutz LLP
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1007 N. Orange Street
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Phone (302) 658-9141

Kimball R. Anderson
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Anthony DiSarro
Lisa J. Parker
Winston & Strawn LLP
35 W. Wacker Drive
Chicago, IL 60601
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CERTIFICATE OF SERVICE

I, Francis DiGiovanni, hereby certify that on April 13, 2007, I caused a copy of the foregoing document to be served by e-mail and hand-delivery on the following counsel of record:

C. Barr Flinn
John W. Shaw
Young Conaway Stargatt & Taylor LLP
The Brandywine Building
1000 West Street, 17th Floor
Wilmington, Delaware 19801

I, Francis DiGiovanni, hereby certify that on April 13, 2007, I caused a copy of the foregoing document to be served by e-mail and by U.S. Mail on the following counsel of record:

Chad S. Hummel
Kathrin A. Wanner
Manatt Phelps & Phillips, LLP
11355 West Olympic Boulevard
Los Angeles, CA 90064

Christopher A. Cole
Gregory W. Fortsch
Manatt, Phelps & Phillips, LLP
700 12th Street, N.W.
Washington, DC 20005

/s/ Francis DiGiovanni
Francis DiGiovanni (#3189)

EXHIBIT U

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LISA J. PARKER
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March 23, 2007

VIA E-MAIL

Manatt Phelps & Phillips LLP
11355 West Olympic Boulevard
Los Angeles, CA 90064
Attention: Chad S. Hummel

Re: Dyson Inc. v. Maytag Corporation, No. 06-CV-654 GMS

Dear Chad:

I write in response to your proposed Limited Settlement Agreement to resolve Plaintiff Dyson, Inc.'s Motion for Preliminary Injunction, which is pending in the above-referenced matter. As you stated in your proposed agreement and as we have represented to Dyson and the Court: 1) the Hoover Fusion and Maytag Legacy vacuums are no longer being manufactured; 2) the Hoover Fusion is no longer being shipped to retailers; 3) "no loss of suction" advertising claims for the Hoover Fusion no longer appear on any Maytag and/or Hoover website; 4) the last shipment of Maytag Legacy vacuum cleaners containing a "no loss of suction" claim on the packaging will be made in April 2007; and 5) "no loss of suction" advertising claims for the Maytag Legacy no longer appear on any Maytag and/or Hoover website.

While we maintain that the advertising for the Hoover Fusion and Maytag Legacy were properly substantiated, in light of the decision to no longer make "no loss of suction" claims for the Fusion and Legacy, Dyson's request for preliminary injunction cannot proceed in good faith. Further, our clients are willing to attest to the above facts in a sworn affidavit to be filed with the Court. As such, we believe the Limited Settlement Agreement you propose is moot and not necessary to resolve this matter.

Sincerely,



Lisa J. Parker

WINSTON & STRAWN LLP

Manatt Phelps & Phillips LLP

C. Hummel

March 23, 2007

cc: Kimball R. Anderson
Stephen P. Durchslag
Anthony DiSarro
Ronald Y. Rothstein
Frank DiGiovanni
John Shaw
Christopher Cole
Kathrin Wanner

EXHIBIT V

1 IN THE UNITES STATES DISTRICT COURT

2 IN AND FOR THE DISTRICT OF DELAWARE

3 - - -
4 DYSON, INC., : Civil Action
5 :
6 Plaintiff, :
7 :
8 v. :
9 :
10 MAYTAG CORPORATION, :
11 :
12 Defendant. : No. 06-654-GMS

9 - - -
10 Wilmington, Delaware
11 Thursday, March 29, 2007
12 3:30 p.m.
13 Telephone Conference
14 - - -

13 BEFORE: HONORABLE GREGORY M. SLEET, U.S.D.C.J.

14 APPEARANCES:

15 JOHN W. SHAW, ESQ., and
16 MONTE T. SQUIRE, ESQ.
17 Young Conaway Stargatt & Taylor, LLP
18 -and-
19 CHAD S. HUMMEL, ESQ., and
20 KATHRIN WANNER, ESQ.
21 Manatt, Phelps & Phillips, LLP
22 (Los Angeles, CA)

23 Counsel for Plaintiff

24 FRANCIS DiGIOVANNI, ESQ.
25 Connolly Bove Lodge & Hutz LLP
-and-
ANTHONY DiSARRO, ESQ.,
RONALD Y. ROTHSTEIN, ESQ., and
LISA J. PARKER, ESQ.
Winston & Strawn
(Chicago, IL)

Counsel for Defendant

1 to such interrogatories?

2 MR. DiSARRO: Interrogatories on sales or
3 numbers of products?

4 THE COURT: Well, no. He is talking about the
5 corporate change.

6 MR. DiSARRO: Absolutely. We could do that.

7 THE COURT: Go ahead, Mr. Hummel.

8 MR. HUMMEL: I was going to suggest the same
9 thing with respect to the second topic.

10 THE COURT: How about the second topic, Mr.
11 DiSarro?

12 MR. DiSARRO: The second topic being --

13 THE COURT: Sales.

14 MR. DiSARRO: Units and sales, fine.

15 THE COURT: All right. Do we want to agree,
16 counsel, so I don't have to hear from you again on this
17 until your briefs are filed, on a number of interrogatories
18 and subparts? Or can you gentlemen figure that out on your
19 own?

20 MR. HUMMEL: I am hopeful we can figure it out,
21 but we won't make it burdensome, Your Honor.

22 THE COURT: Mr. DiSarro.

23 MR. DiSARRO: That is fine. I will rely on Mr.
24 Hummel's representations.

25 THE COURT: All right. Now, do you want --

1 perhaps it's premature, then, given this is going to take
2 place, to attempt to identify a briefing schedule. I don't
3 think we have one. Right?

4 MR. HUMMEL: We do not, Your Honor. We are
5 working to get the brief on the Third Circuit law done, but
6 we would like to get the factual information and we need the
7 interrogatories. Circumstances have changed since we filed
8 it.

9 THE COURT: This is the brief that Mr. DiSarro
10 discusses that needs to be retooled.

11 MR. HUMMEL: That's correct.

12 THE COURT: When do you propose, Mr. Hummel, to
13 get these special interrogatories out to Mr. DiSarro?

14 MR. HUMMEL: We can serve them Monday.

15 THE COURT: Mr. DiSarro, obviously, there are
16 provisions within the Rules of Civil Procedure that provide
17 for time frames to respond. Do you want to take full
18 advantage of that, or are you willing to answer these
19 interrogatories in a more expeditious fashion?

20 MR. DiSARRO: If they are truly limited to those
21 topics, we will answer them in a week.

22 THE COURT: All right. Then, Mr. Hummel, is
23 that acceptable?

24 MR. HUMMEL: Yes, Your Honor.

25 THE COURT: All right. Then, counsel, I am

EXHIBIT W

From: ded_nefreply@ded.uscourts.gov [mailto:ded_nefreply@ded.uscourts.gov]
Sent: Thursday, April 12, 2007 3:31 PM
To: ded_ecf@ded.uscourts.gov
Subject: Activity in Case 1:06-cv-00654-GMS Dyson Inc. v. Maytag Corporation SO ORDERED

This is an automatic e-mail message generated by the CM/ECF system. Please **DO NOT RESPOND** to this e-mail because the mail box is unattended.
*****NOTE TO PUBLIC ACCESS USERS***** You may view the filed documents once without charge. To avoid later charges, download a copy of each document during this first viewing.

U.S. District Court

District of Delaware

Notice of Electronic Filing

The following transaction was entered on 4/12/2007 at 3:30 PM EDT and filed on 4/12/2007

Case Name: Dyson Inc. v. Maytag Corporation

Case Number: 1:06-cv-654

Filer:

Document Number: No document attached

Docket Text:

SO ORDERED, re [62] Stipulation filed by Dyson Inc., Maytag Corporation, Set Briefing Schedule: re[27] MOTION for Preliminary Injunction., ORDER, Setting Deadlines: Opening Brief due 4/20/2007., Answering Brief due 5/4/2007., Reply Brief due 5/11/2007., Joinder of Parties due by 4/18/2007. Ordered by Judge Gregory M. Sleet on 4/12/2007. (asw)

1:06-cv-654 Notice has been electronically mailed to:

Francis DiGiovanni fdigiovanni@cblh.com, dkt@cblh.com, ljarrell@cblh.com
John W. Shaw jshaw@ycst.com, corpcal@ycst.com, corporate@ycst.com

1:06-cv-654 Notice has been delivered by other means to:

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

DYSON, INC.,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 06-654-GMS
)	
MAYTAG CORPORATION,)	
)	
Defendant.)	

STIPULATION AND PROPOSED ORDER

WHEREAS, the Court convened a status conference with the parties on March 29, 2007, during which the Court and the parties discussed the status of the preliminary injunction motion that is presently pending in this action;

WHEREAS, Plaintiff Dyson Inc. ("Dyson") requested to take limited 30(b)(6) deposition testimony to obtain information Dyson deemed relevant to the preliminary injunction motion, including the current status of the products and claims at issue in the case, and in order to determine which parties are proper defendants to this action, given the recent corporate restructuring involving the entities manufacturing the vacuums at issue in this case;

WHEREAS, the Court ordered that, in lieu of the 30(b)(6) deposition testimony requested by Dyson, Dyson shall be permitted to serve certain limited special interrogatories on Defendant Maytag Corporation ("Maytag") and that Maytag shall be required to answer these certain limited special interrogatories within an expedited time frame, and that this limited discovery shall be followed by renewed, full briefing on Dyson's preliminary injunction motion;

WHEREAS, Maytag has objected to answering special interrogatories 8 and 9 on an expedited schedule because it is Maytag's position that they are beyond the scope of the special

interrogatories as discussed on the March 29 telephonic hearing with the Court and does not plan to provide substantive responses to those interrogatories on an expedited basis;

WHEREAS, Dyson disagrees with Maytag's view as to whether special interrogatories 8 and 9 are within the scope of the Court's directive; and

WHEREAS, the Court ordered that the parties submit a proposed briefing schedule on the preliminary injunction motion;

WHEREAS, the parties have agreed to extend the date by which a party may move to join other parties from March 29, 2007, as stated in paragraph 2 of the Scheduling Order (D.I. 51), to April 18, 2007, and the date by which motions to amend the pleadings must be filed is not affected by this extension;

WHEREAS, the proposed dates set forth in this stipulation will not otherwise affect any other dates in this case;

NOW, THEREFORE, IT IS HEREBY STIPULATED AND AGREED, subject to the approval and order of the Court,

1. Dyson served special interrogatories on Maytag on April 2, 2007.
2. Maytag shall serve its responses to Dyson's special interrogatories served in connection with this Motion pursuant to the Court's directive (along with any objections) on or before April 13, 2007 (except Interrogatory Nos. 8 and 9, which shall be answered within the time allowed under the Federal Rules.)
3. Dyson shall serve and file an opening brief in support of its renewed motion for preliminary injunction on or before April 20, 2007.
4. Maytag shall serve and file an answering brief in opposition to Dyson's renewed motion for preliminary injunction on or before May 4, 2007.

5. Dyson shall serve and file a reply brief in support of its renewed motion for preliminary injunction on or before May 11, 2007.

6. All motions to join other parties shall be filed on or before April 18, 2007.

YOUNG CONAWAY STARGATT &
TAYLOR, LLP

CONNOLLY BOVE LODGE
& HUTZ LLP

/s/ Monté T. Squire

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Attorneys for Plaintiff Dyson, Inc.

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*Attorneys for Defendant
Maytag Corporation*

SO ORDERED this ____ day of _____, 2007.

United States District Judge

EXHIBIT X

**UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

DYSON, INC.,

Plaintiff,

v.

MAYTAG CORPORATION,

Defendant.

Civil Action No. 06-CV-6576(DC)

DECLARATION OF GORDON THOM

I, Gordon Thom, declare and state as follows:

1. I am currently employed as President of Dyson, Inc. ("Dyson"), a position I have held for about eight months. I joined the parent company in 1998, and since then have held numerous positions, including Chairman of Dyson K.K. in Japan, and International Managing Director of Dyson Ltd. Earlier in my career, I held positions with the British Foreign and Commonwealth Office in Tokyo and New Delhi, among other locations.

2. As President of Dyson, I am in charge of the company's U.S. operations, including sales, marketing and distribution. Through my position, I have gained intimate familiarity with sales in the United States of residential vacuum cleaners, and what we understand to be the impact of marketing campaigns by Dyson and Dyson's competitors on Dyson's sales performance in the United States. I provide the following testimony based on my personal knowledge and my inquiry of those responsible within the company for obtaining such information, except where stated on information and belief.

3. Both Dyson and Maytag compete in the United States market for sales of upright residential vacuum cleaners. Other competitors in this category include Dirt Devil, Bissell and Eureka.

4. Dyson first entered the United States market in 2002, and has enjoyed considerable commercial success. Since the U.S. launch of Dyson vacuum cleaners, Dyson vacuums have increased sales in a business that had been previously dominated by Hoover.

5. Dyson markets its upright vacuum cleaners as the only vacuum cleaner that "Doesn't lose suction." Since its U.S. launch, Dyson has widely advertised this "No Loss of Suction" as a significant point of difference.

6. Consumers will use a vacuum cleaner for a period of years, and then will replace it. A part of Dyson's growth in the U.S. upright residential vacuum cleaner business has depended on consumers "trading up" from their older products to new, premium priced and technologically-advanced vacuums.

7. On information and belief, Dyson's share of U.S. residential upright vacuum cleaner sales (as measured by NPD Houseworld, in dollar volume sales, based on three month data) first surpassed that of Maytag/Hoover (the previous market leader) in December, 2004. Since that time, Dyson's dollar volume sales of residential upright vacuum cleaners have consistently exceeded those of Maytag/Hoover.

8. In the most recent three month period ending June 2006, Dyson was the category leader with a 25.8 share of the upright category, based on dollar volume sales. Maytag/Hoover was in second place, with a 14.7 share.

9. Based on these recent figures, Dyson and Maytag together account for 40.5% of the market share of upright vacuum cleaners in the United States.

10. Dyson and Maytag/Hoover are now and have been engaged in fierce competition for new customers and for customers of each others' products who may be looking to purchase a new (or additional) vacuum cleaner.

11. In May 2005, Maytag Corporation launched a new brand of vacuum under the name "Hoover Fusion." On the Hoover Fusion package and website, Maytag claimed and still claims that the Hoover Fusion has "No Loss of Suction."

12. In or around May of 2006, Maytag launched a highly similar product to the Fusion called the "Maytag Legacy," for which it also claims "No Loss of Suction."

13. I understand that the National Advertising Division ("NAD") of the Council of Better Business Bureaus has referred Hoover's false advertising of "No Loss of Suction" to the FTC for possible enforcement under federal false advertising laws. While Dyson awaits the outcome of any investigation the FTC may undertake, Dyson still must face the commercial consequences of Maytag/Hoover's continued dissemination of false advertising. The false and unsubstantiated claims for the Fusion and Legacy, if not stopped, likely will cause substantial competitive injury to Dyson's reputation in the marketplace of a nature that may be difficult to precisely quantify.

14. Undoubtedly, consumers will purchase the Legacy or Fusion products because they believe the false No Loss of Suction claims. Given Dyson's position in the U.S. market, in all likelihood, such consumers might otherwise have purchased one of the Dyson models. The amount of sales lost attributable to Maytag/Hoover's No Loss of Suction claims is difficult to

quantify because Dyson has no real ability to identify Fusion and Legacy customers and to query them regarding their reasons for purchase.

15. Maytag/Hoover's continued use of these No Loss of Suction claims, in defiance of the NAD recommendations, also wrongfully erodes Dyson's own "No Loss of Suction" claim and therefore causes substantial injury to Dyson's reputation among U.S. consumers. Maytag/Hoover's predatory adoption of Dyson's well-known positioning for "No Loss of Suction" will likely confuse consumers who are familiar with Dyson's unique products regarding whether Dyson is the only brand to offer No Loss of Suction, and may induce consumers who are considering both Dyson and Maytag/Hoover to purchase a less expensive Maytag Legacy or Hoover Fusion instead.

16. Maytag/Hoover's continued use of the No Loss of Suction claim also is highly likely to lead consumers to believe the Maytag Legacy and Hoover Fusion deliver equivalent suction performance over time to Dyson's models.

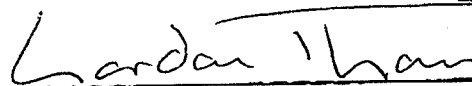
17. In addition, Maytag/Hoover's newly adopted advertising language stating that "Vacuum Cleaner Suction Tests Do Not Represent Carpet Cleaning Ability" threatens to compound the harm to Dyson by falsely telling consumers that suction over time does not matter. We have learned through a published interview of a Maytag executive that Maytag's intent in adopting this language was to inflict damage on Dyson.

18. Finally, I believe that consumers who purchase the Maytag Legacy or Hoover Fusion because of the No Loss of Suction claim, and who are later disappointed by the real-world performance of those units despite the advertising promise, may lose confidence in the entire concept of "No Loss of Suction." Such consumers would be less likely to respond to Dyson's

truthful No Loss of Suction claim in the future, and would, as a result, be less likely to purchase a Dyson vacuum cleaner.

19. Once damaged, the reputation of a company and its products is hard to rebuild. If Maytag/Hoover is permitted to continue its false advertising campaign, which Maytag itself has admitted is designed to "hit" Dyson in the marketplace, Dyson's reputation may be gravely injured.

I declare under penalty of perjury of the laws of the United States that the foregoing is true and correct, and that I executed this declaration on August 28th, 2006.

A handwritten signature in black ink, appearing to read "Gordon Thom", written over a horizontal line.

Gordon Thom
President
Dyson, Inc.